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Link 10. Doctoral Prioritization https://mus.edu/che/arsa/ProgramReview/2019/MSU_Program_Reviews_2019.pdf
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Montana State University: Academic Program Review Guidelines

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Montana State University: Academic Program Review

Updated August 2019

Purpose: Systemic departmental review should assist the faculty, department head, dean and University administration in: 1) evaluating how effectively the department is achieving its program learning outcomes and its educational and research goals; 2) identifying the department's strengths, weaknesses, opportunities or threats; 3) developing strategic directions and priorities for the future of the departments; and 4) fulfilling the MUS Board of Regents (Policy 303.3) requirements.

The review is intended to be an opportunity for discussion and reflection by the faculty on different components of their mission. A departmental review has three parts: 1) a self-study of the department and its programs by the departmental faculty, department head and dean; 2) a peer review by University faculty members from outside the department; and 3) a page summary from the dean identifying key opportunities for the department based on the self-study and peer review.

Programs undergoing external accreditation review may use their accreditation self-evaluation and their accreditation as their internal program review.

Timing: The MUS Board of Regents (Policy 303.3 – Program Review) requires that MSU conduct regular internal reviews of all of its academic programs at least once every seven years. The reviews "shall include all programs in the "degree and program inventory" maintained by the office of the commissioner of higher education, and shall include options, minors and certificates of more than 29 credits."

Responsibility and Scope: Reviews will be conducted at the departmental level, since departments are the primary organizational structure for academic programming at MSU. A departmental review will cover all undergraduate and graduate instructional programs (degrees, programs, options, minors and certificates), scholarly and creative activity, engagement, and service. Reviews are forward-thinking and should be evaluative, not just descriptive. Any plans for improvement and future directions require judgements about the program(s), curriculum, learning outcomes, students, staff, faculty, and scholarly productivity within existing resources. Departmental self-studies, peer reviews and dean's summaries should provide concise, honest appraisal of programs and department strengths and weaknesses as well as future directions.

Review Teams: Program reviews are most often conducted by hybrid teams comprised of members of the MSU faculty and at least one external disciplinary expert. However, the department may request an internal review if they so choose. Hybrid review teams include at least two MSU faculty members from a closely related field and at least one disciplinary expert from a different institution. Typically, internal reviews are conducted by a team of three MSU faculty. The reviewers will be selected by the Provost, but the college dean and graduate dean, will provide a list of prospective reviewers to the Provost after consulting with the department head and faculty.

The decision on whether to use a hybrid or internal review team is determined by the Provost with input from the college dean, the dean of the graduate school, the department head and the faculty. When a site visit is required, the Office of the Provost may cover a portion of the cost, however costs associated with professional accreditation visits are borne by the colleges.

Both hybrid and internal reviews are normally conducted during a one or two-day visit (depending on the size of the department and number of programs). Final review reports are to be submitted within three weeks of the visit. Departments have the primary responsibility for scheduling all events associated with a site visit whether a hybrid or an internal visit.

Program Review: Self-Study

Departmental Self-Study – The self-study is to be carried out by the department as a whole. It is evaluative, not just descriptive, and it should provide a meaningful, self-reflection of the past seven years in response to mission, goals, strategic plan of the department or college (if no strategic plan exists for the department/unit) as well as departmental assessment of its educational offerings. It will also identify priorities and directions for the future that take into consideration budgetary and other constraints.

Participation: The self-study should be carried out in consultation with faculty, students, staff and any departmental partners. Departments are encouraged to have all members of the faculty participate in the self-study and a draft should be made available to all departmental faculty for input or comment prior to electronic submission to the Vice Provost, Deans (college and graduate) and the review team.

General: Self-study report should be 25-30 with any additional data or documents included in appendices. Suggested page numbers below are guidelines to encourage a concise and manageable self-study that is focused on interpretation, evaluation and strategic future directions rather than description. Departmental documents, extensive data tables or lists of individual faculty accomplishments should not be in the main body of the self-study but may be included in the appendices.

Data: The use of data in standard formats already available in departments, colleges, and from the Office of Planning and Analysis (OPA) website will reduce the need for special data collection efforts. Departments should include copies of the enrollment and graduation data tables provided to them by the Vice Provost/OPA. These are the data that are required by the BOR to be included in our annual report on program reviews.

A. Title Page: Department and Programs of Study (1 page)

B. Mission, Goals, and Strategic Plan (1-2 pages)
    a. The overall mission and goals of the department and how the department contributes to the college and University missions.
    b. Discuss progress toward achieving strategic plan goals (may use departmental, college, or University plan goals)

C. Students (3-5 pages – excluding data tables) - Interpretations of data should be explanatory but also forward thinking. The goal is to explain any observed trends since the last program review and provide projections for the next seven years based on current trends and departmental goals. Please include:
    a. Interpretation of the institution provided student enrollment and graduation data for the 7-year review period by degree, option, and minor. Please include the data tables provided to you by the Vice Provost/Office of Planning and Analysis here, in the body of the report.
    b. Interpretation of other institutional data (KPI dashboards, retention data, DWF data, time to degree for graduate students, departmental level teaching effectiveness, instructional expenditures, etc.).
    c. Evaluation of departmental advising and mentoring (undergraduate and graduate) based on goals identified by the department.
    d. Student perceptions of the department, program(s), faculty, students and

references to student and alumni achievements (highlights).

D. Summary of Assessment of Educational Programs (2-4 pages) - Annual assessment plans and reports should not be included in the body of the self-study but should be linked or included in an Appendix.
    a. Summary of:
        i. relationship between learning objectives of the program(s) and curriculum content;
        ii. student achievement of learning objectives of the program(s);
        iii. summary of significant curriculum changes since last program review, what were changes meant to address?, how were changes related to program(s) learning objectives;
        iv. any proposed/anticipated changes to curriculum or programing in the department.
    b. Evaluation of:
        i. the relation of the program(s) to the goals of the college;
        ii. the continuing health of and need for the program(s);
        iii. the overall quality of the program(s);
        iv. use and impact of any High Impact Practices used in the department/program(s);
        v. the interaction of faculty and students with other parts of the University (e.g. developmentof or participation in interdisciplinary or co-curricular programs).

E. New Degree Programs/Options (1 page) – Complete for each new degree or option implemented since the last program review.
    a. Compare actual program enrollment, graduates, curriculum cost to the original proposal submitted to OCHE (proposals to OCHE are available in CIM) and report on any discrepancies or changes that have occurred as programs/options were implemented. (If the new program does not yet have enrollments please describe timeline for program implementation.)

F. Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis of Academic Programs (1-2 page per program informed by sections C, D and E of Self-Study)

G. Scholarly and Creative Activities - The scope and excellence of scholarly and creative activities (4-5 pages)
    a. Review and evaluation of departmental metrics (metrics should include summaries and trends of scholarly products, grant activity, research expenditures, awards, etc
    b. Review and evaluation of any institutionally provided data from the college dean or Provost
    c. Review and evaluation of interaction of faculty and students with other parts of the University (e.g. development of and participation in centers/institutes, interdisciplinary scholarly programs, etc.).
    d. Relationship to the universities strategic research goals

H. Service, Outreach and Engagement (2-3 pages)
    a. Service of faculty and staff to the college or University. (Summary level, # and % faculty sitting on college and University standing committees, ad hoc committees, or special task forces, search committees, etc)

b. Service of faculty to the discipline, to the state or to others (Summary level # and % of departmental faculty involved in various types of service).
c. Review and evaluation of outreach and engagement efforts with attention to their role in achieving university strategic goals (supporting data or actual assessment or evaluation reports can be included in Appendices).
d. Evaluation of efforts towards the integration of research, teaching and engagement in the department.

I. Extension (3-5 pages) (Section I is only necessary for departments with TT or NTT faculty with full or split appointments funded through Extension)
    a. Assessment of "community" relationships and partners important to the department's extension faculty.
    b. Assessment of the impact of the programs engaged in by the department's Extension faculty.
    c. Relationship of the extension faculty to the strategic goals of the unit, college and university.

J. Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis of all department activities (1-2 pages based on sections A-I).

K. Strategic Directions for the Future (1-2 pages)

Please include each appendix as a separate document:
Appendix A: Faculty CVs
Abbreviated faculty CVs (1-3 pages each)

Appendices B-?:
Other supporting data or descriptions directed at helping reviewers better understand the department and its faculty, students and staff.

Program Review: Review Team Report

Scope of Report (typically 5-8 pages): The review team report provides an objective analysis of the review department's strengths, weaknesses and plans for the future. The analysis should be based on disciplinary standards of the reviewed department, but may recommend ways to enhance the department's academic programs, scholarly work and reputation, service, engagement and integration. The report should be constructive offering praise for strengths, options for development or modification where appropriate and suggestions for improved recognition and reputation within the university and beyond.

A. Title Page: Department, Program(s) Reviewed, Names, Titles and Departments of Reviewers
B. Academic Programs
    a. Quality and rigor of the academic program(s) and effectiveness of the department's program assessment activities, including relationship between curriculum(s) and program learning outcomes.
    b. Status of program curriculum (appropriate breadth and currency for the discipline or professional program) and evidence of improvements based on assessment of learning outcomes.
C. Strengths –
    a. Areas of notable success, academic program improvements, achievements in teaching, scholarly activities, engagement, integration and/or service activities.
    b. Areas of key strategic strength contributing to departmental, college or university strategic goals.
D. Challenges
    a. Academic program areas failing to meet productivity benchmark values or learning outcome benchmarks or assessment processes are not being used optimally for program improvement.
    b. Areas of challenge related to the department's ability to meet departmental, college or university strategic goals.
E. Opportunities
    a. Recommendations about each of the academic program(s) including opportunities for specific changes, strategic growth or revitalization, or expansion/contraction of programming.
        i. Program(s) demonstrating trends showing consistently low or continually declining student credit hours, majors, degrees awarded should be identified and recommendations for some action should be offered.
    b. Recommendations that the review team has identified that could help assist the department in achieving its goals.

Program Review: Dean's Recommendation Report

Scope of Report (typically 1-2 pages): The college dean provides feedback to the department to direct them towards next steps, actions, alignment with college and university strategic goals and initiatives, and potential campus collaborations based on the self-study, the review site visit and the review team report.

The dean's brief report should be forward-thinking, offering recommendations about specific changes, strategic growth or contraction of any academic programs. The dean may also recommend immediate attention, planning or a three-year follow-up around programs that are not effectively implementing program assessment and improvement practices or are experiencing low or declining student credit hours, enrollment head count or degrees awarded.

The report should also address recommendations for future directions in teaching, research, engagement or service relative to strategic goals or initiatives at the department, college or university level.

AAD 2018 Comparative Database Default Time Windows

Work Type	Coverage Start Year	Coverage End Year
Articles	2015	2018
Citations	2014	2018
Conference Proceedings	2015	2018
Books	2009	2018
Grants	2014	2018
Awards	Varies by award	2018

Academic Analytics 1. Data Base

Note: Grants are Federal and do not include corporate funding, Bair Ranch, WSARE, and dollars spent towards research from MSU Foundation

Comparative Database

The comparative database reflects scholarly activity for faculty at the institution in a given academic year, including professional honors and awards, federal grants, book publications, journal articles, conference proceedings, and citations.

Citations data are reported for articles and conference proceedings published within the citations time window, not for citations made within the time window to any past publication.

Grants data are reported for grants which are active during the grants time window, not just those awarded within the time window.

Award coverage start years vary by award inception, but for all of the awards in our database, all instances of the award being conferred for the history of the award have been matched.

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Animal and Range Sciences, Department of

Discipline: **Animal Sciences**

Institutions: 52 / 14 | Departments: 61 / 16 | Faculty: 1287 / 343

Scholarly Research Index **-0.6** | Custom Index **-0.5**

Academic Analytics 2. Articles per Faculty

Unit Metrics

Articles | Articles Per Faculty

Institution	Metric Value
Washington State University, Animal Sciences	21.0
University of California, Davis, Animal Science	15.9
Texas A&M University, Animal Science	15.0
University of Hawaii, Human Nutrition, Food and Animal Sciences	10.6
Colorado State University, Animal Sciences	10.3
Oregon State University, Animal and Rangeland Sciences	9.2
South Dakota State University, Dairy and Food Science	8.7
University of Wyoming, Animal Science	8.1
Texas Tech University, Animal and Food Sciences	8.1
Texas A&M University, Poultry Science	8.0
South Dakota State University, Animal Sciences	7.1
North Dakota State University, Animal Sciences	6.4
Montana State University, Animal and Range Sciences	6.3
New Mexico State University, Animal and Range Sciences	6.0
Utah State University, Animal, Dairy and Veterinary Sciences	5.8
University of Idaho, Animal and Veterinary Science	5.0

Journal Name	Articles	Disc Articles
Journal of Animal Science	9	1,159
Rangeland Ecology and Management	8	30
PLoS ONE	4	303
Rangelands	4	16
Scientific Reports	3	181
Small Ruminant Research	3	33
BMC Genomics	2	102
Animal	2	76
Journal of Dairy Science	1	906
Meat Science	1	312
The Professional Animal Scientist	1	219
Animal Feed Science and Technology	1	80
Frontiers in Microbiology [1664302X]	1	72
Frontiers in Veterinary Science	1	42
Frontiers in Genetics	1	41
Agronomy Journal	1	19
Frontiers in Physiology [1664042X]	1	18
Tropical Animal Health and Production	1	17

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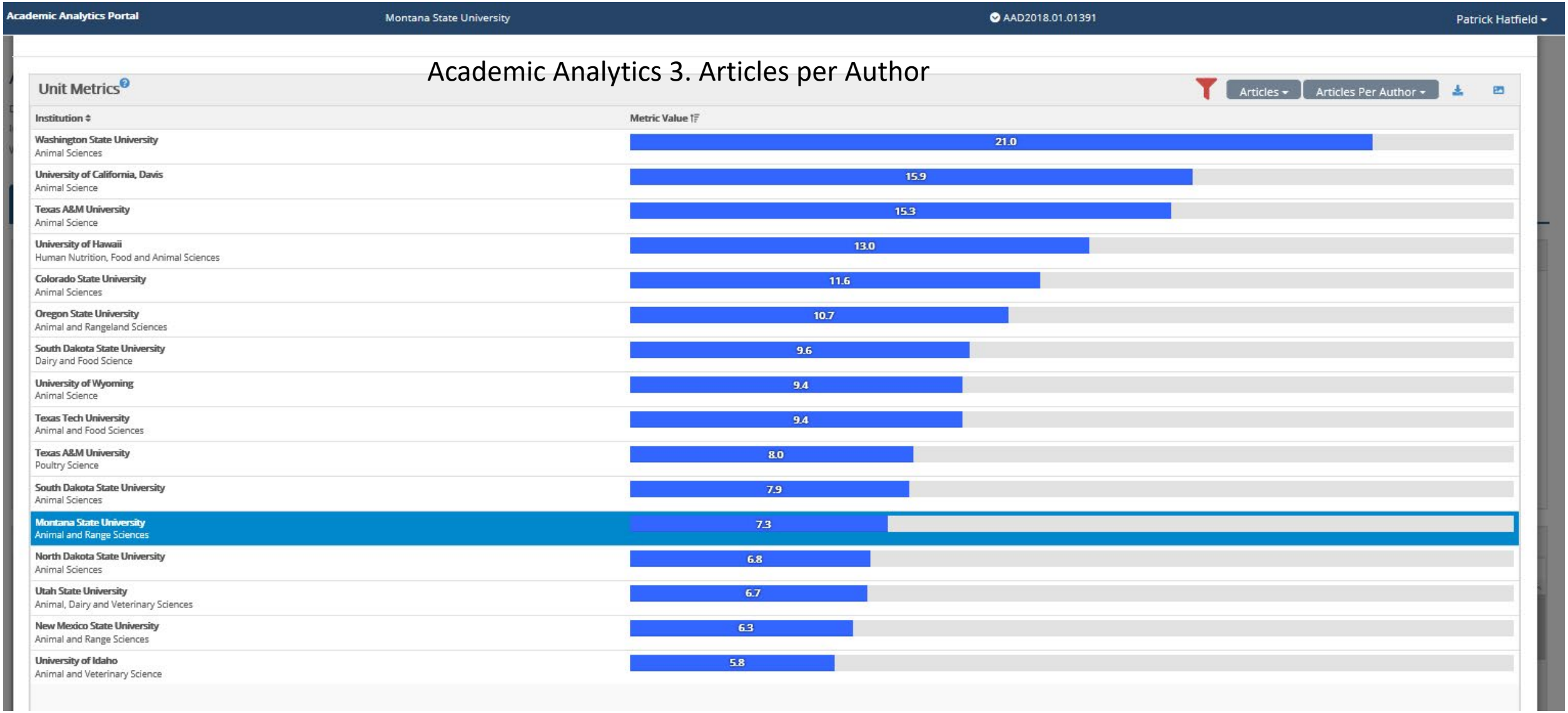
Academic Analytics 3. Articles per Author



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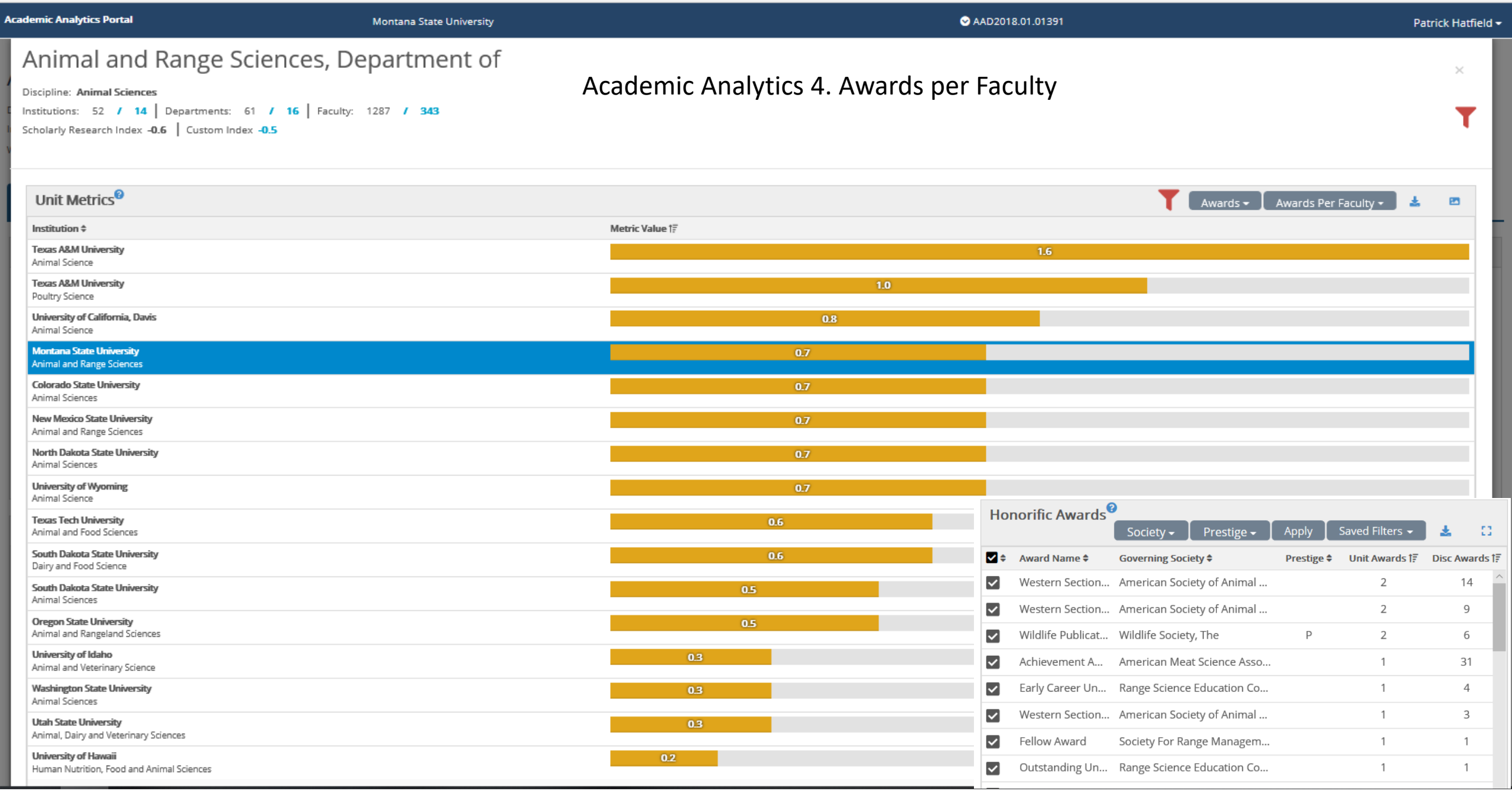
Academic Analytics 4. Awards per Faculty



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Academic Analytics Portal | Montana State University | AAD2018.01.01391 | Patrick Hatfield

Animal and Range Sciences, Department of

Discipline: **Animal Sciences**

Institutions: 52 / 14 | Departments: 61 / 16 | Faculty: 1287 / 343

Scholarly Research Index **-0.6** | Custom Index **-0.5**

Academic Analytics 5. Citations per Faculty

Unit Metrics

Citations | Citations Per Faculty

Institution	Metric Value
Washington State University Animal Sciences	253.8
University of California, Davis Animal Science	193.1
Texas A&M University Animal Science	161.9
Colorado State University Animal Sciences	123.9
Montana State University Animal and Range Sciences	92.1
South Dakota State University Dairy and Food Science	90.6
University of Wyoming Animal Science	82.9
University of Hawaii Human Nutrition, Food and Animal Sciences	78.5
Oregon State University Animal and Rangeland Sciences	72.3
Utah State University Animal, Dairy and Veterinary Sciences	64.4
Texas Tech University Animal and Food Sciences	62.9
Texas A&M University Poultry Science	52.1
South Dakota State University Animal Sciences	47.8
University of Idaho Animal and Veterinary Science	42.8
New Mexico State University Animal and Range Sciences	40.6
North Dakota State University Animal Sciences	38.3

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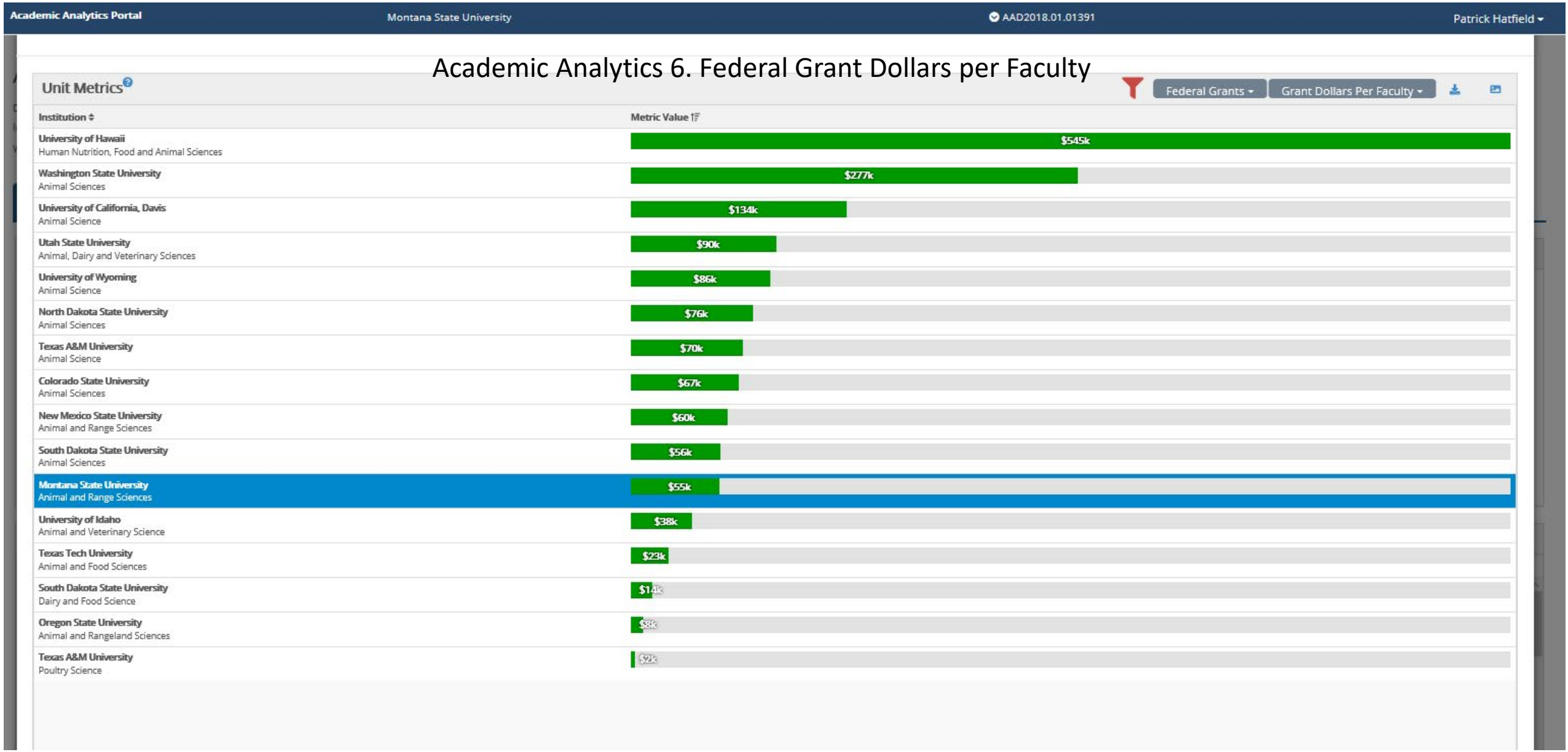
Academic Analytics 6. Federal Grant Dollars per Faculty



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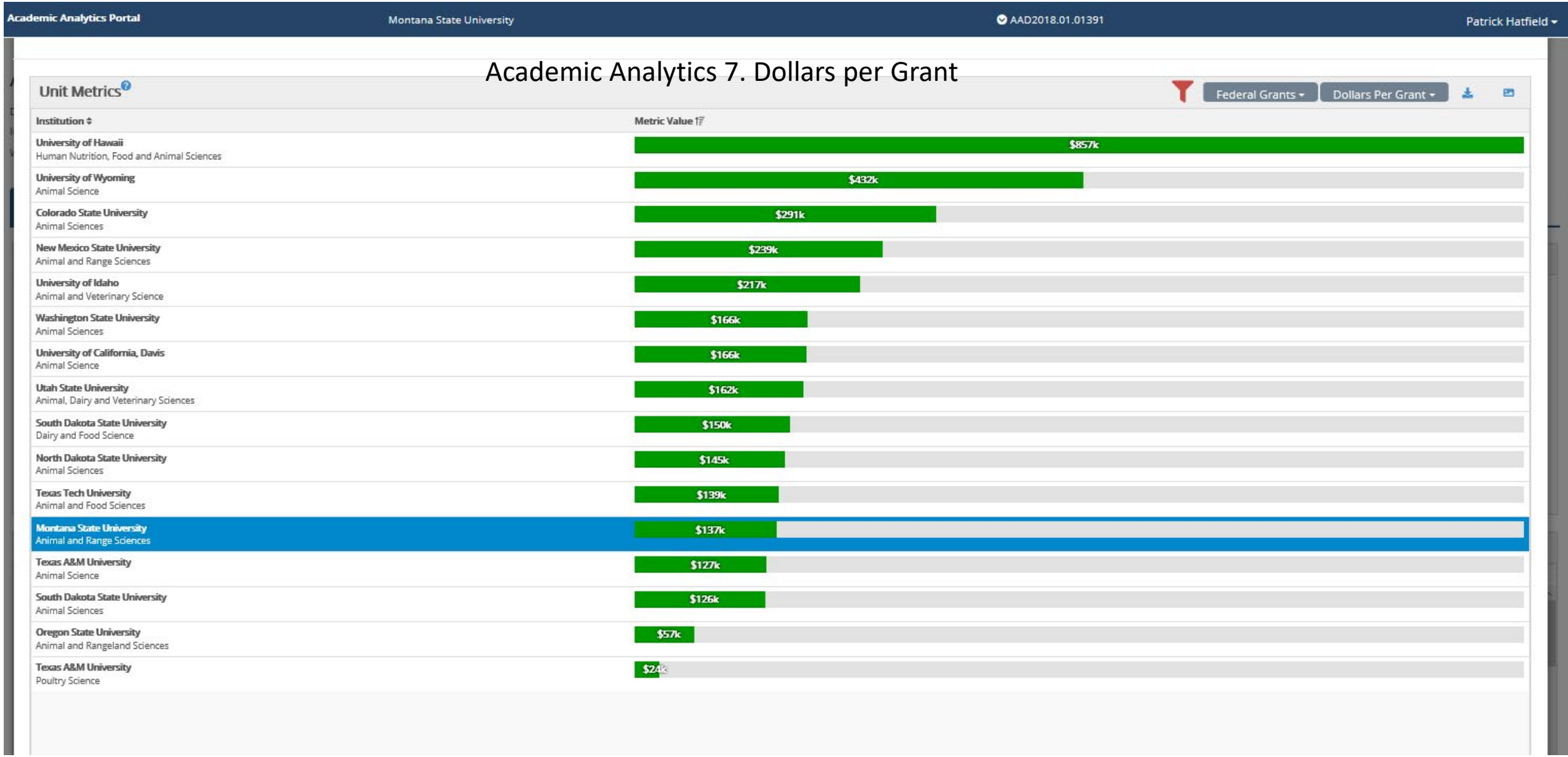
Academic Analytics 7. Dollars per Grant



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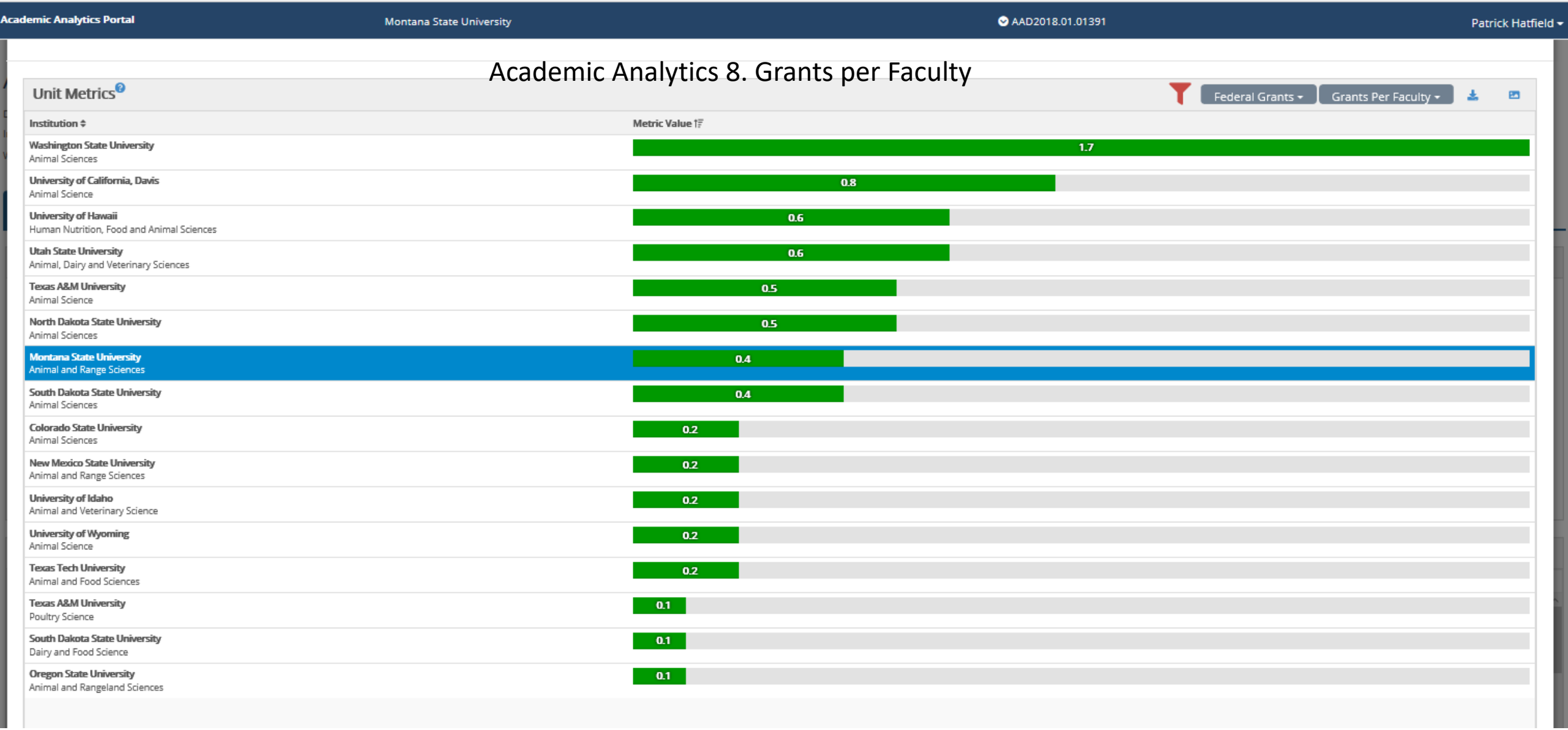
Academic Analytics 8. Grants per Faculty



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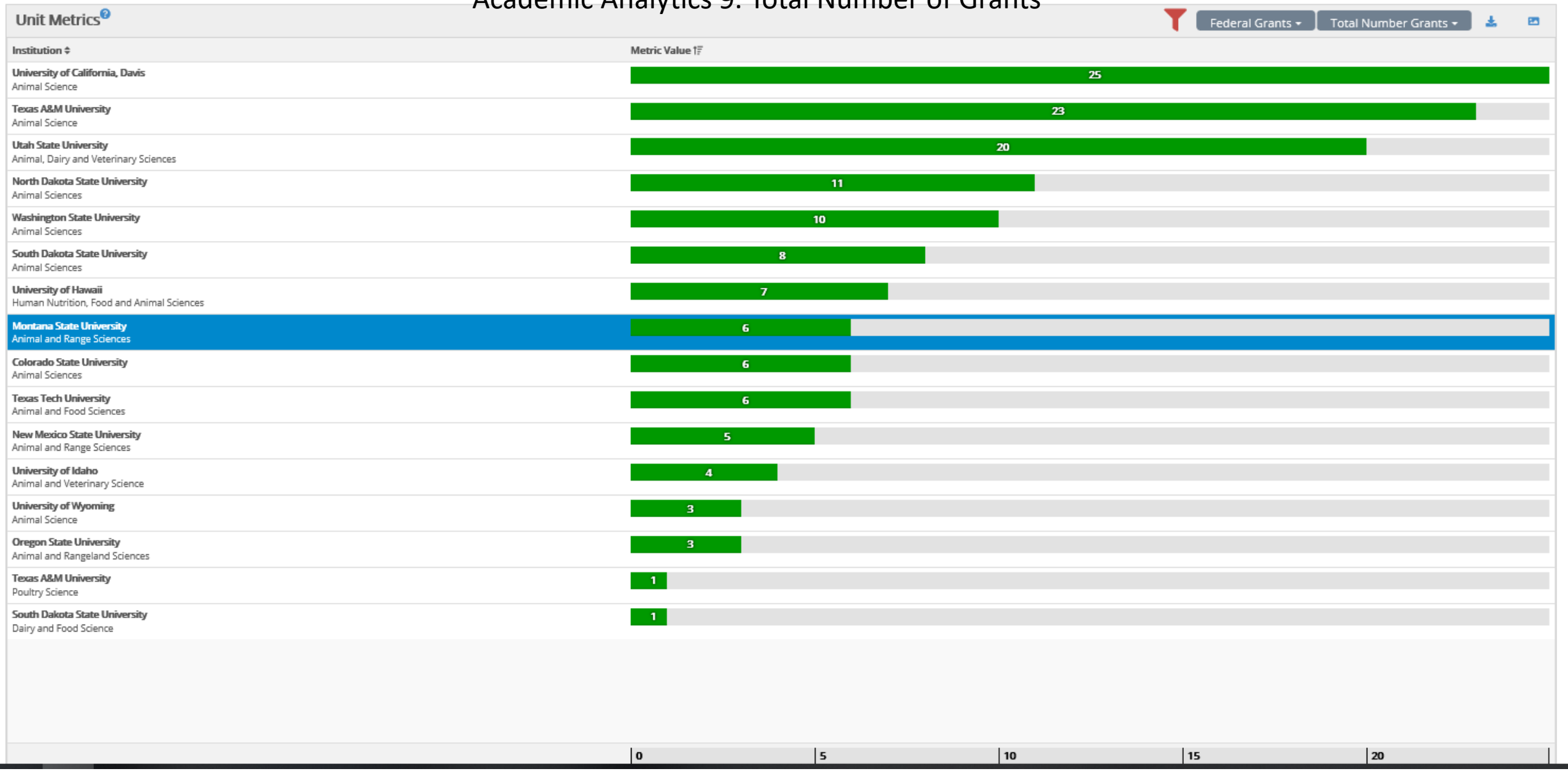
Academic Analytics 9. Total Number of Grants



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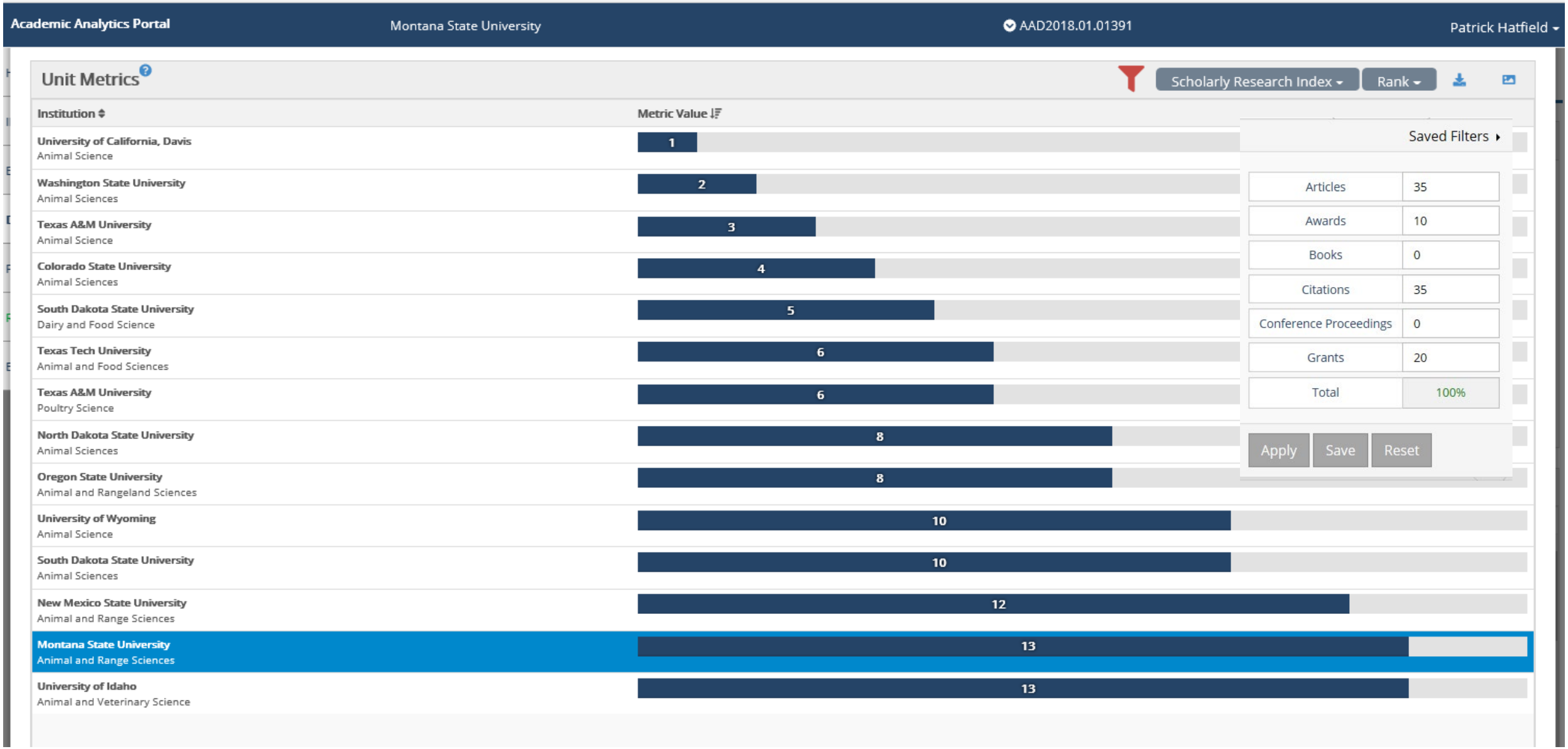
Academic Analytics 10. Scholarly Research Rank



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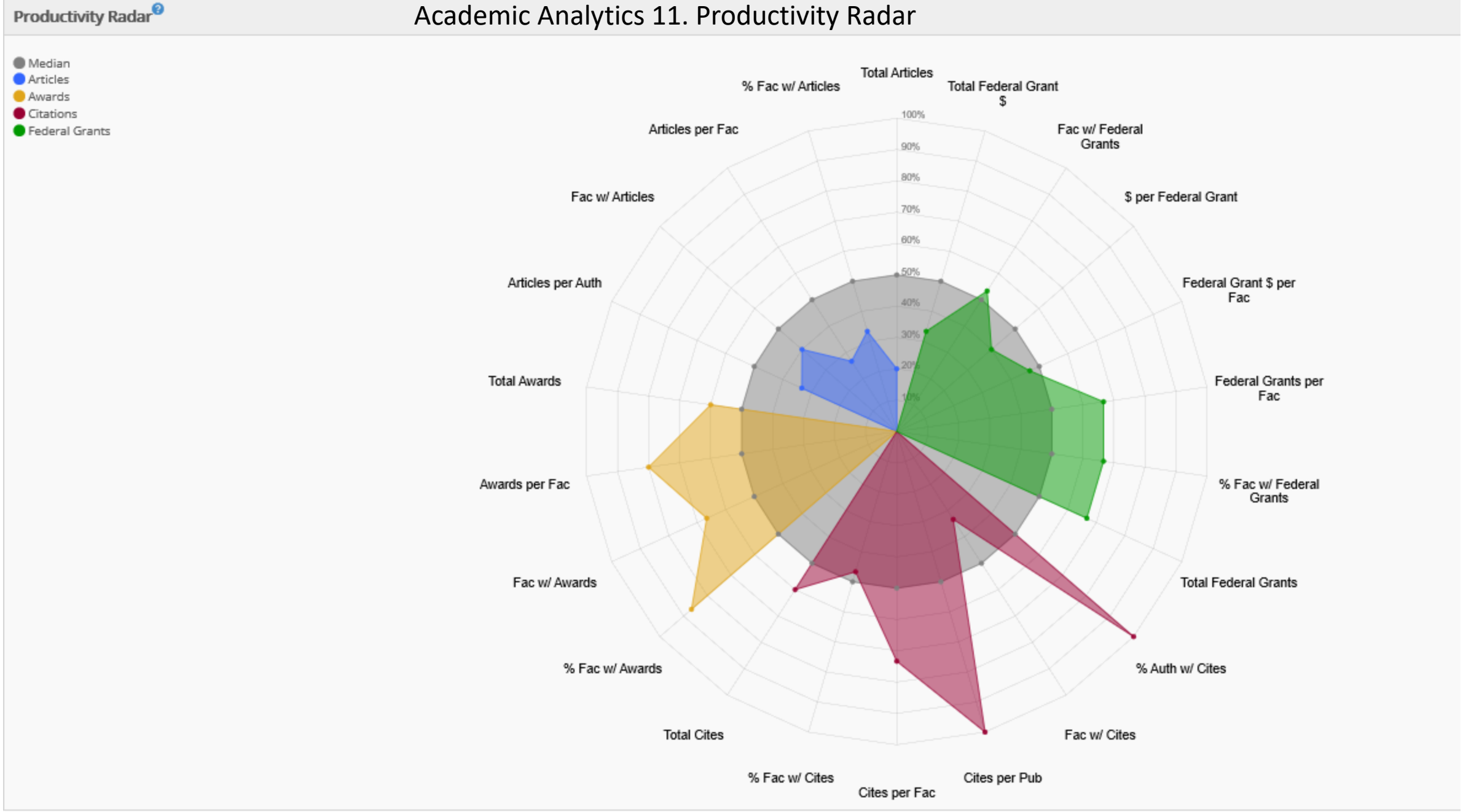
Academic Analytics 11. Productivity Radar



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Faculty 1 Faculty and Professional Staff including Base, Grant*, and Foundation Funded * (excluding OTO - NTT) - July 2013

Individual	position	TT NTT	years service	Hired	Rank	Extension	Teaching	Research	Service	Contract
Bok Sowell	Rangeland Ecology	TT	20	1993	Professor	-	0.8	0.1	0.1	AY
Bret Olson	Rangeland Ecology and Management	TT	25	1988	Professor	-	0.45	0.45	0.1	FY
Carl Yeoman	Moledular Biology	TT	1	2012	Assistant Professor	-	0.36	0.54	0.1	AY
Clayton Marlow	Riparian/Livestock Interaction	TT	33	1980	Professor	-	0.7	0.2	0.1	FY
Craig Carr	Range Ecology	TT	1	2012	Assistant Professor	-	0.36	0.54	0.1	AY
Glenn Duff	Department Head and Acting Deam	TT	3	2010	Professor	-	0.1	0.1	0.1	AY
Gregory Johnson	Veterinary Etomology	TT	27	1986	Professor	0.54		0.36	0.1	FY
James Berardinelli	Reproductive Physiology	TT	32	1981	Professor	-	0.42	0.48	0.1	FY
Jane Boles	Meat Science	TT	14	1999	Associate Professor	-	0.6	0.3	0.1	FY
Janice Bowman	Ruminant Nutrition	TT	21	1992	Professor	-	0.5	0.4	0.1	FY
Jeffrey Mosley	Range Extension Specialist	TT	18	1995	Professor	0.7		0.2	0.1	FY
Jennifer Thomson	Livestock Genomics	TT	1	2012	Assistant Professor	-	0.36	0.54	0.1	AY
Patrick Hatfield	Sheep Production and Acting Department Head	TT	17	1996	Professor	-	0.3	0.6	0.1	FY
Rachel Endecott	Beef Extension	TT	7	2006	Associate Professor	0.85		0.05	0.1	FY
Rodney Kott	Sheep Extension	TT	33	1980	Professor	0.7		0.2	0.1	FY
Shannon Moreaux	Equine Science	TT	5	2008	Assistant Professor	0.2	0.6	0.1	0.1	AY
Andrea Shockley	Equestrian Instructor	NTT	10	2003	Instructor		1			AY
Cecil Tharp	Pesticide Education Specialist	NTT	10	2003	Extension Associate	1				FY
Tommy Bass	Livestock Environment Specialist	NTT	6	2007	Extension Associate	1				FY
Mike Frisian	Wildlife Instructor	NTT	4	2009	Instructor		0.25			
TT FTE & avg years			16.13			2.99	5.55	5.16		
NTT FTE & avg years			6.08			2.00	1.25	0.00		
					# Assist Prof = 4					
					# Assoc. Prof = 2					
					# Prof = 10					
Brent Roeder*	Reseach and extension assoc.	professional	4	2009	research and extension	0.5		0.5		
Devon Ragen*	Sheep Research Assoicate	professional	2	2011	Research Associate			1		FY
Hayes Goosey*	Sheep Research Scientist	professional	13	2000	Rsearch Scientist			1		FY
Jeanne Rankin*	Grant Admin/program lead	professional	2	2011	Extension Associate	1				
Lisa Surber*	Sheep Research Scientist	professional	8	2005	Research Scientist			1		FY
Marni Rolston*	Entomology research Associate	professional	14	1999	Research Associate			0.5		FY
Merrita Fraker-Marble*	Range Rsearch Associate	professional	3	2010	Rsearch Associate			1		
Rachel Frost*	Range Rsearch Associate	professional	3	2010	Research Associate			1		FY
Tom Wolfe*	Farrier School Director	professional	0	2013	Leader/Instructor					

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Faculty 2 Faculty and Professional Staff including Base, Grant*, and Foundation Funded * (excluding OTO - NTT) - July 2019

Individual	position	TT NTT	years service	Hired	Rank	Extension	Teaching	Research	Service	Contract
Bok Sowell	Rangeland Ecology	TT	26	1993	Professor	-	0.8	0.1	0.1	AY
Bret Olson	Rangeland Ecology and Management	TT	31	1988	Professor	-	0.45	0.45	0.1	FY
Carl Yeoman	Moledular Biology	TT	7	2012	Associate Professor	-	0.36	0.54	0.1	AY
Clayton Marlow	Riparian/Livestock Interaction	TT	39	1980	Professor	-	0.7	0.2	0.1	FY
Craig Carr	Range Ecology	TT	7	2012	Associtate Professor	-	0.36	0.54	0.1	AY
Jane Boles	Meat Science	TT	20	1999	Associate Professor	-	0.6	0.3	0.1	FY
Jeffrey Mosley	Range Extension Specialist	TT	24	1995	Professor	0.7		0.2	0.1	FY
Jennifer Thomson	Livestock Genomics	TT	7	2012	Associate Professor	-	0.36	0.54	0.1	AY
Lance McNew	Wildlife Habitat Ecology	TT	5	2014	Assistant Professor		0.23	0.67	0.1	AY
Megan Van Emon	Beef Extension Specialist	TT	5	2014	Assistant Professor	0.67		0.23	0.1	FY
Patrick Hatfield	Department Head	TT	23	1996	Professor	-	0.1	0.1	0.1	FY
Tim DelCurto*	Nancy Cameron Endowed Chair in Range Beef Cattle	TT	3	2016	Professor		0.3	0.6	0.1	AY
Andrea Shockley	Equestrian Instructor	NTT	16	2003	Instructor		1			AY
Brent Roeder	Sheep and Wool Extention Specialist	NTT	1	2018	Extension Associate	0.67		0.23	0.1	FY
Cecil Tharp	Pesticide Education Specialist	NTT	16	2003	Extension Associate	1				FY
Hannah DelCurto	Animal Science Instructor	NTT	5	2014	Instructor		1			FY
Rory Bauer	Equestrian Instructor	NTT	1	2018	Instructor		0.15			
Merrita Fraker-Marble	Range Ecology Instructor	NTT	4	2015	Instructor		0.25			
Mike Frisian	Wildlife Instructor	NTT	10	2009	Instructor		0.25			
Tamara Parrott	Equine Science Instructor	NTT	2	2017	Instructor		1			AY
Tommy Bass	Livestock Environment Specialist	NTT	12	2007	Extension Associate	1				FY
TT FTE & avg years			16.42			1.37	4.26	4.47		
NTT FTE & avg years			7.44			2.67	3.65	0.23		
					# Assist Prof = 2					
					# Assoc. Prof = 4					
					# Prof = 6					
Devon Ragen*	Sheep Research Assoicate	Professional	8	2011	Research Associate			0.25		
Marni Rolston*	Entomology research Associate	Professional	20	1999	Research Associate			1		FY
Ben Wheaton	lab manager	Professional	2	2017	Lab manager			1		FY

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Faculty 3 Faculty and Professional Staff including Base, Grant*, and Foundation Funded * (excluding OTO - NTT) - August 2020

Individual	position	TT NTT	years service	Hired	Rank	Extension	Teaching	Research	Service	Contract
Amanda Bradbery	Equine Science	TT	0	2020	Assistant Professor		0.65	0.25	0.1	AY
Bok Sowell	Rangeland Ecology	TT	27	1993	Professor	-	0.3	0.7	0.1	AY
Bret Olson	Rangeland Ecology and Management	TT	32	1988	Professor	-	0.45	0.45	0.1	FY
Carl Yeoman	Moledular Biology	TT	8	2012	Associate Professor	-	0.36	0.54	0.1	AY
Carla Sanford	Beef Exxtension Specialist	TT	1	2019	Assistant Professor	0.6	0.15	0.15	0.1	FY
Christian Posbergh	Sheep Production	TT	0	2020	Assistant Professor		0.3	0.6	0.1	AY
Clayton Marlow	Riparian/Livestock Interaction	TT	40	1980	Professor	-	0.7	0.2	0.1	FY
Craig Carr	Range Ecology	TT	8	2012	Associate Professor	-	0.8	0.1	0.1	AY
Forage vacancy	Forage Extesnion Specialist	TT	0	2020	Assistant Professor	0.5	0.13	0.27	0.1	FY
Jane Boles	Meat Science	TT	21	1999	Associate Professor	-	0.6	0.3	0.1	FY
Jarred Beaver	Wildlife Extension Specialist	TT	0	2020	Assistant Professor	0.5		0.4	0.1	FY
Jeffrey Mosley	Range Extension Specialist	TT	25	1995	Professor	0.7		0.2	0.1	FY
Jennifer Thomson	Livestock Genomics	TT	8	2012	Associate Professor	-	0.36	0.54	0.1	AY
Lance McNew	Wildlife Habitat Ecology	TT	6	2014	Assistant Professor		0.23	0.67	0.1	AY
Megan Van Emon	Beef Exxtension Specialist	TT	6	2014	Assistant Professor	0.67		0.23	0.1	FY
Patrick Hatfield	Department Head	TT	24	1996	Professor	-	0.1	0.1	0.1	FY
Rodrigo Marques	Ruminant Nutrition	TT	0	2020	Assistant Professor		0.3	0.6	0.1	
Sarah McCoski	Embryogenesis and Placentation	TT	1	2019	Assistant Professor		0.3	0.6	0.1	AY
Tim DelCurto*	Nancy Cameron Endowed Chair in Range Beef Cattle	TT	4	2016	Professor		0.3	0.6	0.1	AY
Andrea Shockley	Equestrian Instructor	NTT	17	2003	Instructor		1			AY
Brent Roeder	Sheep and Wool Extention Specialist	NTT	2	2018	Extension Associate	0.67		0.23	0.1	FY
Cecil Tharp	Pesticide Education Specialist	NTT	17	2003	Extension Associate	1				FY
Hannah DelCurto	Animal Science Instructor	NTT	6	2014	Instructor		1			FY
Rory Bauer	Equestrian Instructor	NTT	2	2018	Instructor		0.15			
Merrita Fraker-Marble	Range Ecology Instructor	NTT	5	2015	Instructor		0.25			
Mike Frisian	Wildlife Instructor	NTT	11	2009	Instructor		0.25			
Tamara Parrott	Equine Science Instructor	NTT	3	2017	Instructor		1			AY
Tommy Bass	Livestock Envir. Specialist	NTT	13	2007	Extension Associate	1				FY
TT FTE & avg years			11.72			2.97	6.03	7.50		
NTT FTE & avg years			8.44			2.67	3.65	0.23		
					# Assist Prof = 7					
					# Assoc. Prof = 4					
					# Prof = 6					
Rachel Frost*	Dan Scott Endowed Ranch Management Program Leader	Professional	1	2019	Program Leader		1			FY
farrier school director	Farrier	Professional			vancant		1			
Marni Rolston*	Ento research Associate	Professional	21	1999	Research Associate			1		FY

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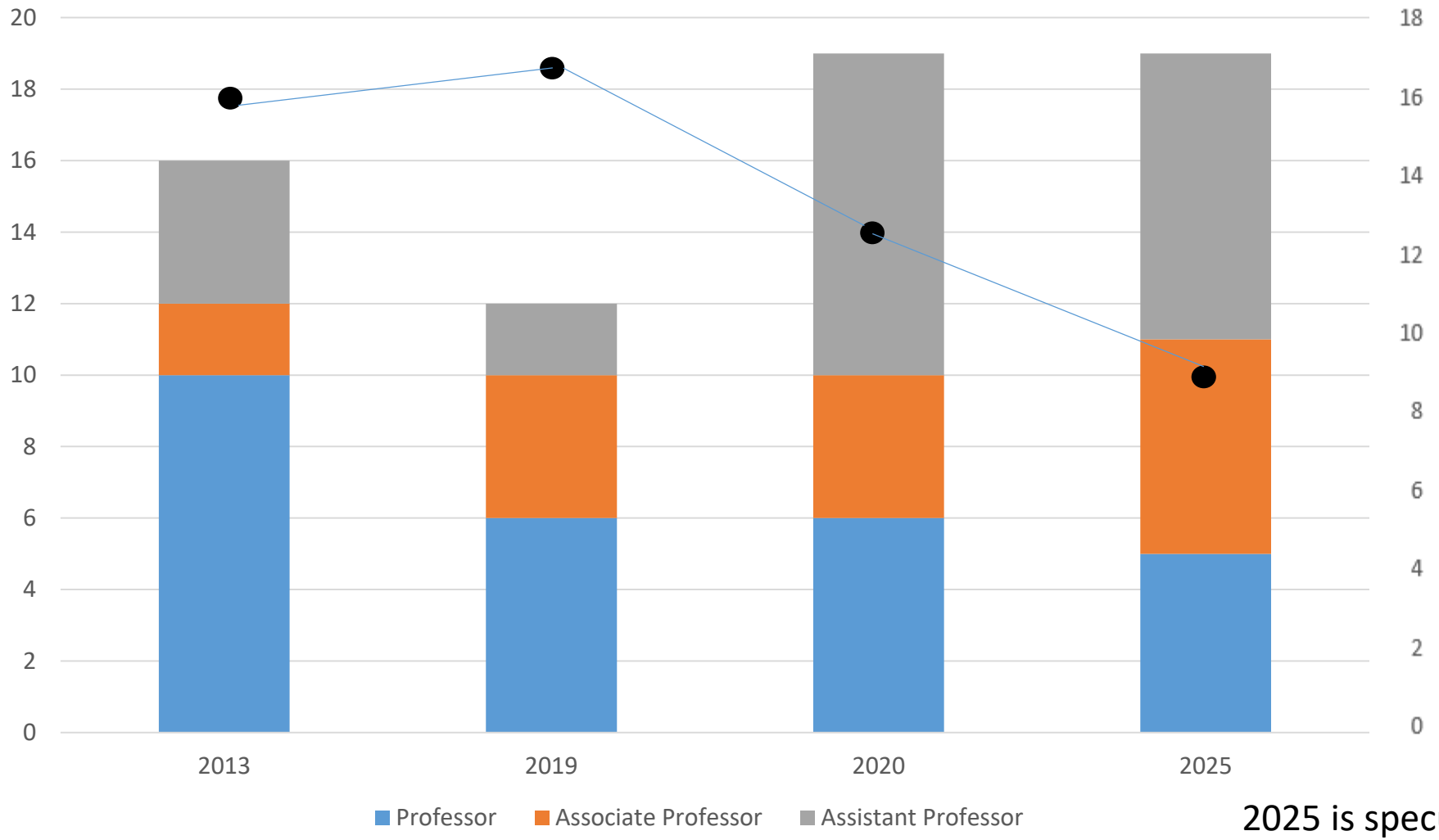
Number of Faculty - Stacked Bars

Years of service - line



2025 is speculation

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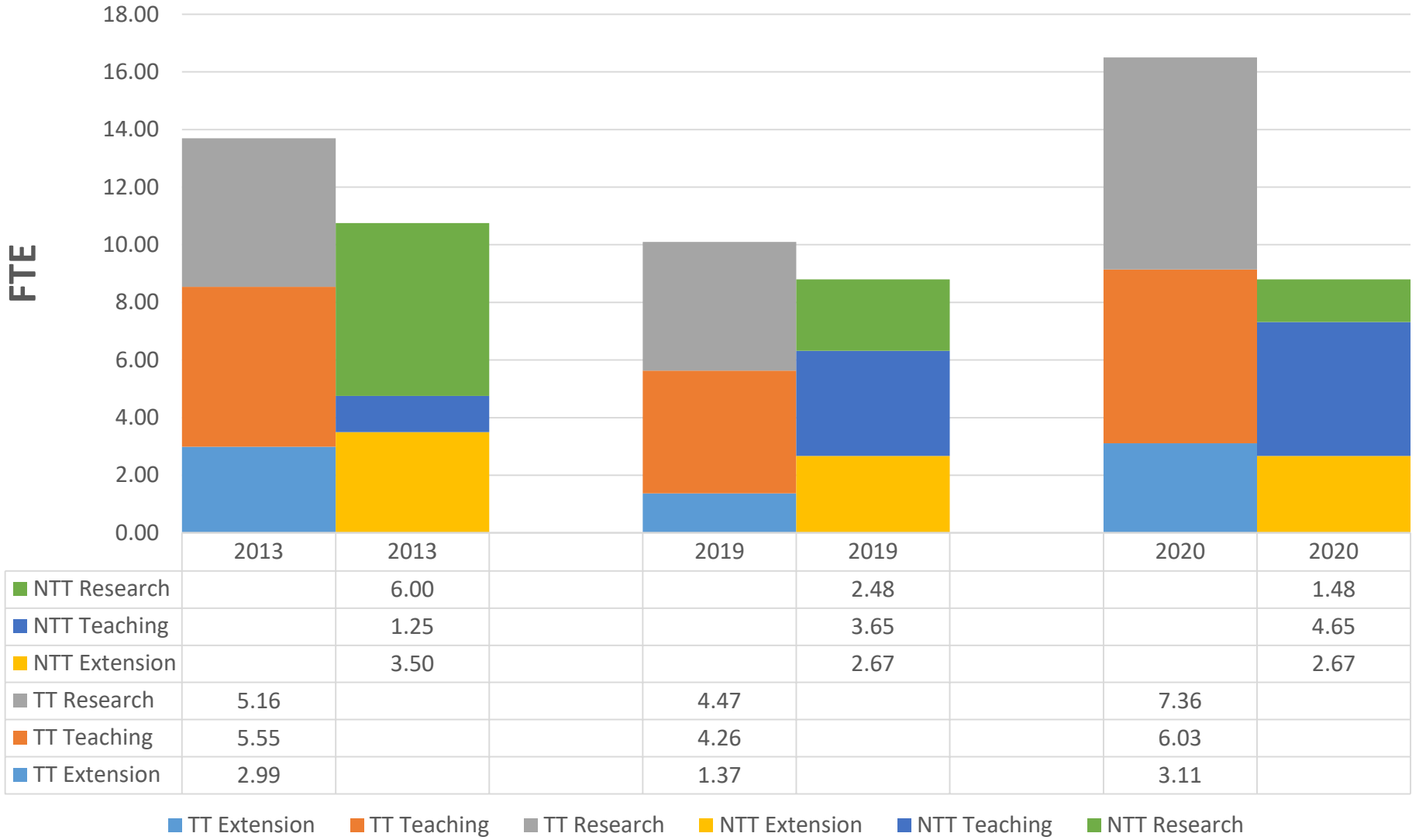
Faculty 5. TT, NTT, and Professional Staff (included in NTT) FTEs for Teaching, Research, and Extension



	2013	2013		2019	2019		2020	2020
NTT Research		6.00			2.48			1.48
NTT Teaching		1.25			3.65			4.65
NTT Extension		3.50			2.67			2.67
TT Research	5.16			4.47			7.36	
TT Teaching	5.55			4.26			6.03	
TT Extension	2.99			1.37			3.11	

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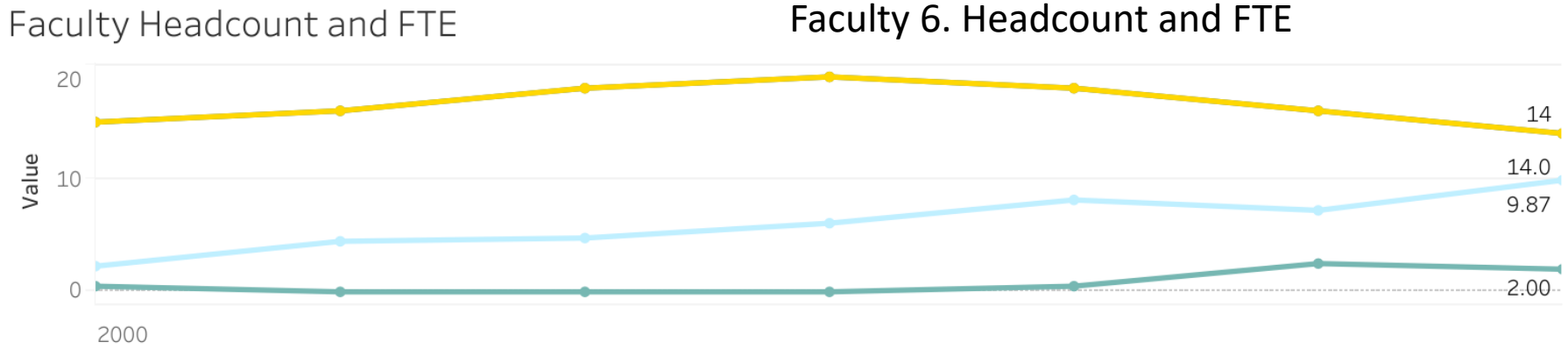
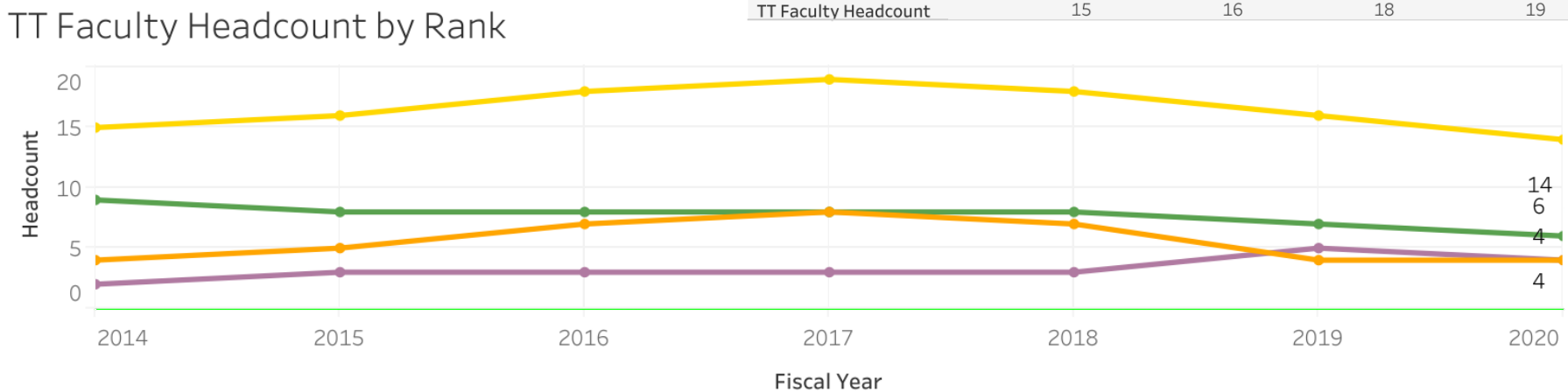
Faculty 6. Headcount and FTE



	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
TT Faculty Headcount	15	16	18	19	18	16	14
TT Faculty FTE	15.0	16.0	18.0	19.0	18.0	16.0	14.0
NTT Faculty FTE	2.27	4.47	4.76	6.07	8.12	7.20	9.87
GTA FTE	0.50	0.00	0.00	0.00	0.50	2.50	2.00

Measure Names
TT Faculty Head..
GTA FTE
TT Faculty FTE
NTT Faculty FTE

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Assistant Professors	4	5	7	8	7	4	4
Associate Professors	2	3	3	3	3	5	4
Full Professors	9	8	8	8	8	7	6
TT Faculty Headcount	15	16	18	19	18	16	14



Measure Names
TT Faculty Head..
Full Professors
Assistant Profe..
Associate Profe..

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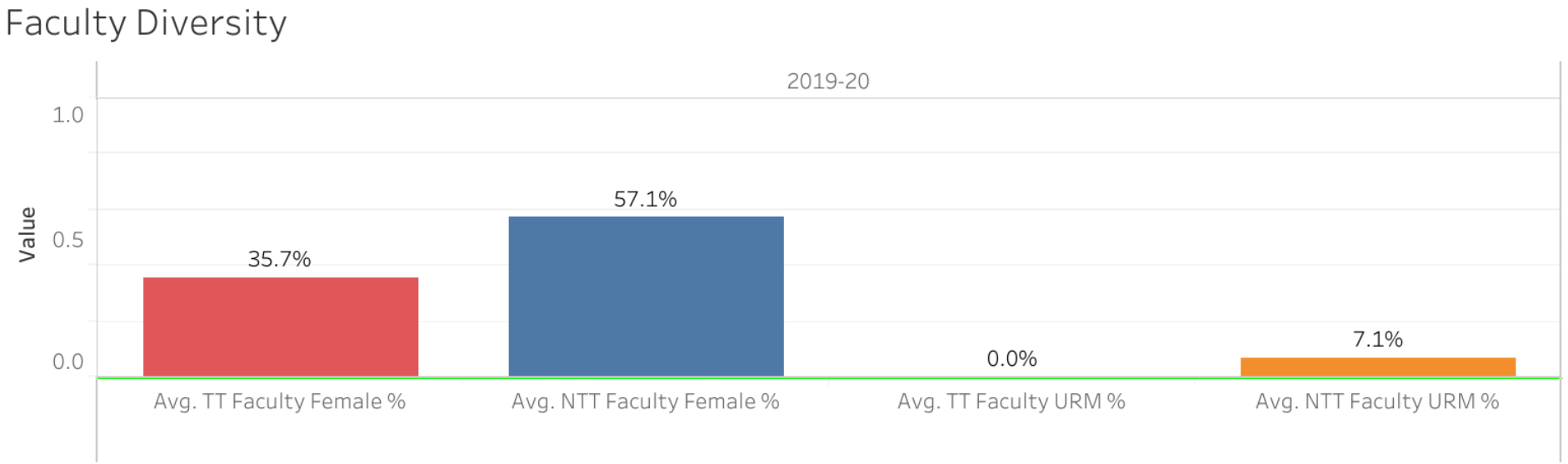
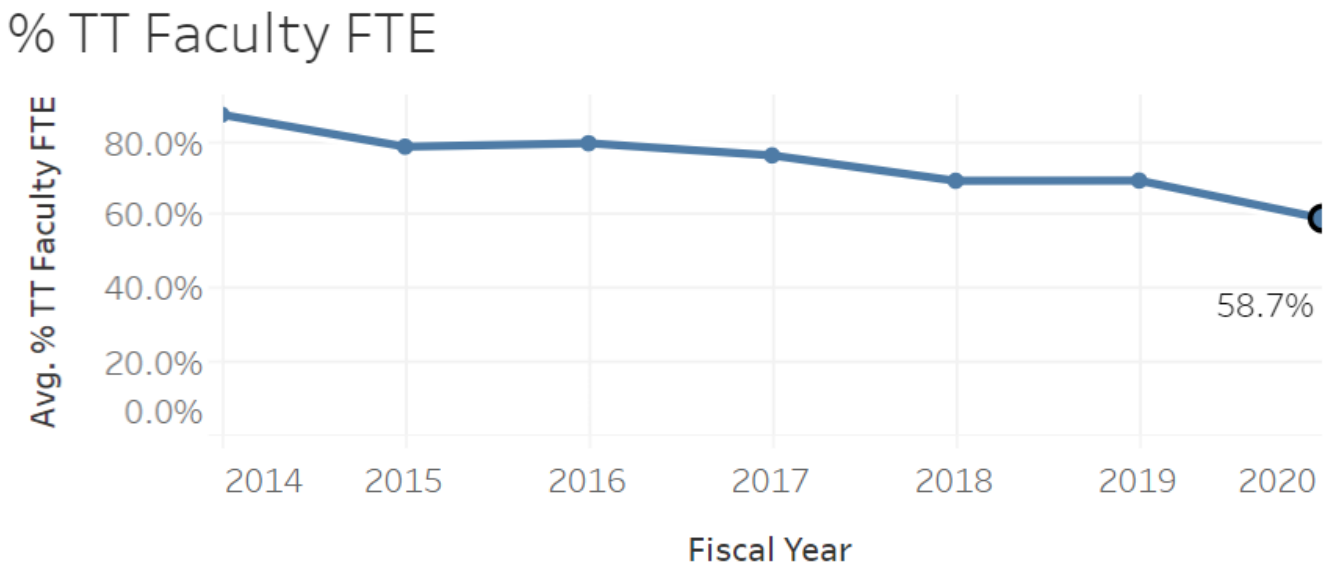
Faculty 7. Diversity and FTE





2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
86.9%	78.2%	79.1%	75.8%	68.9%	69.0%	58.7%

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Faculty 8. Retirements, Resignations, Hires, and New Positions

Positions 2013 TT FTE Research = 5.16 Teaching = 5.55 Extension = 2.99	2013 #	2013 and 2020 Retirement and Resignation = 30 New hirers = 34	2020 #	Summer 2020 2013 TT FTE Research = 7.36 Teaching = 6.03 Extension = 3.11
TT	16	11	19	Including Nancy Cameron endowed chair and current search for extension forage
NTT teaching and extension*	3	0	7	Including Dan Scott Ranch Management program Leader
Wool lab Manager	1	4	1/2	Filled with two part time employees
Lab Manager	1	3	1	Spousal accommodation
Farrier Program	1	2	1	Vacant – offer made in 3/2020
Admin	4	4	4	Fully staffed at 4
Livestock Operations	7	7	6	Fully staffed at 6

* Including Professional Staff

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Funding 1. OSP Expenditures, Animal Science Faculty

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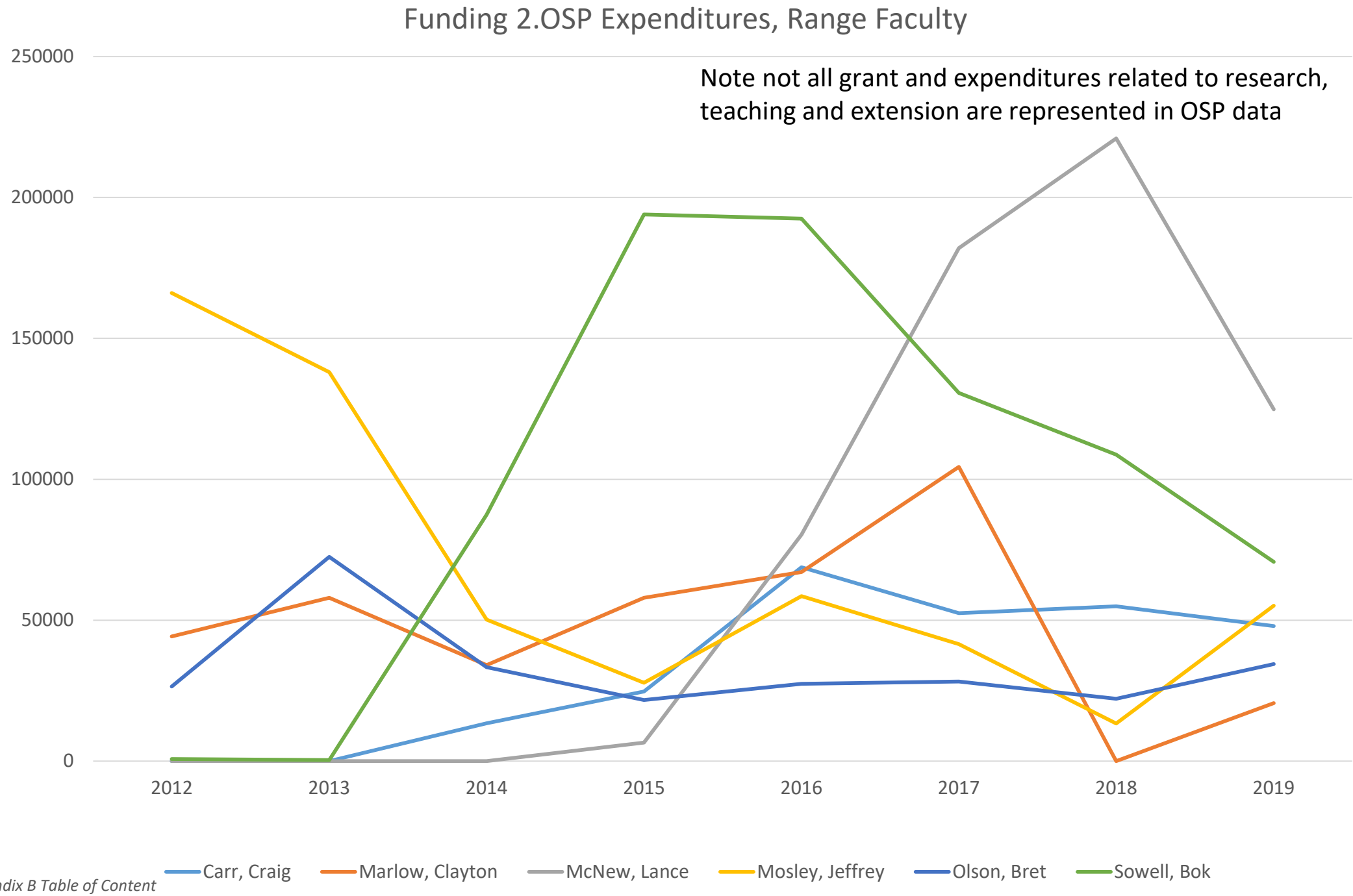

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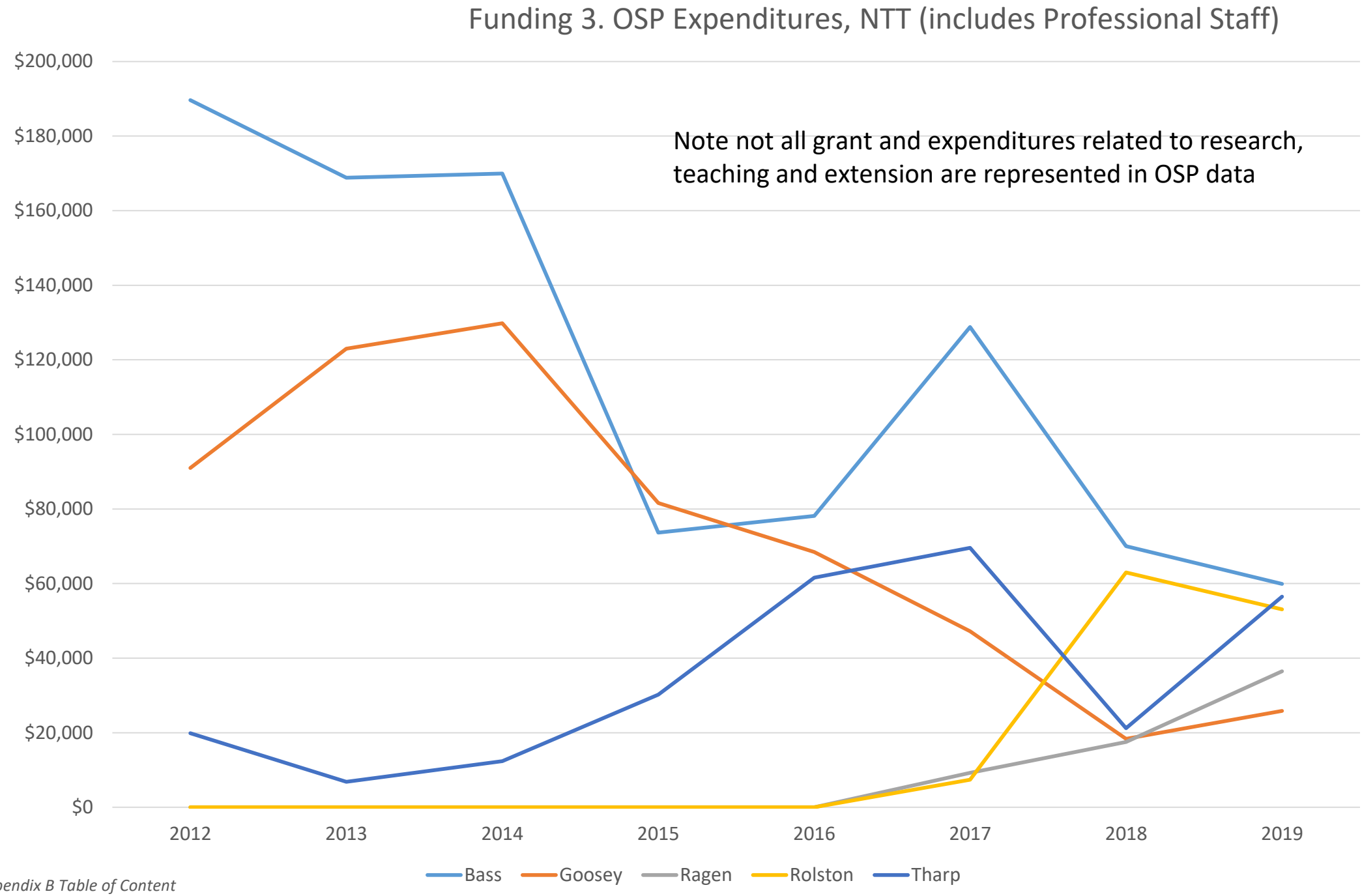

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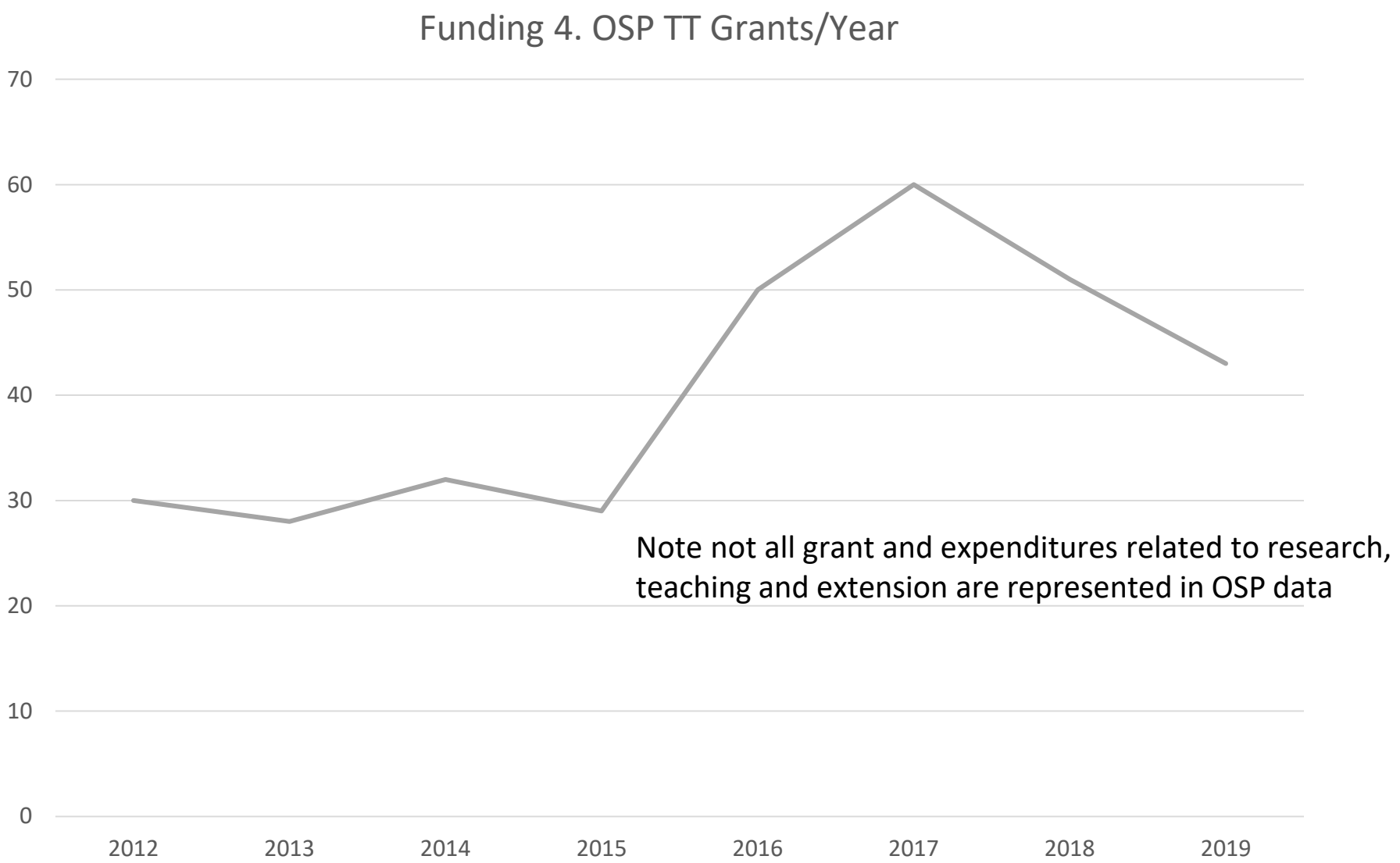

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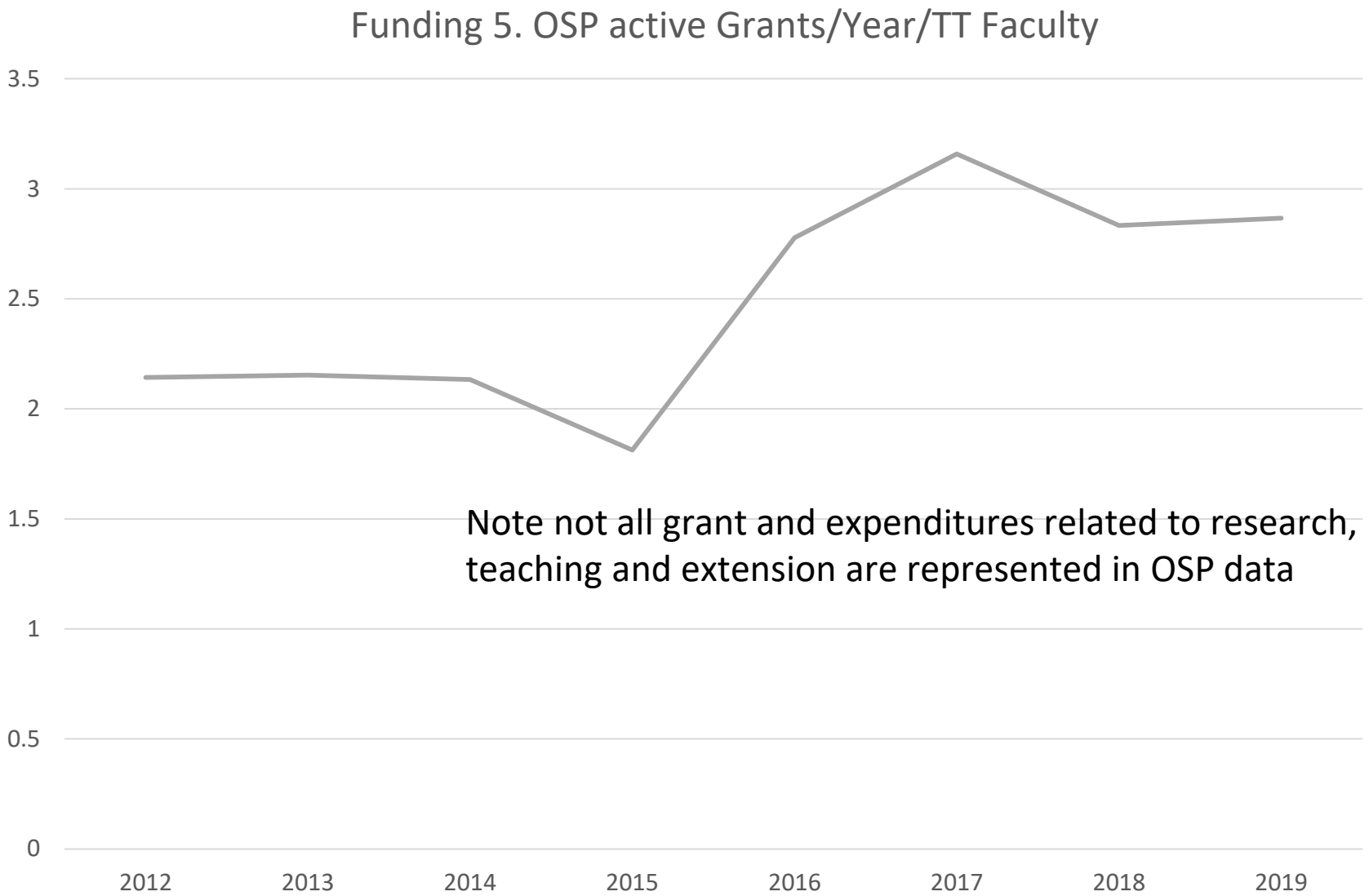

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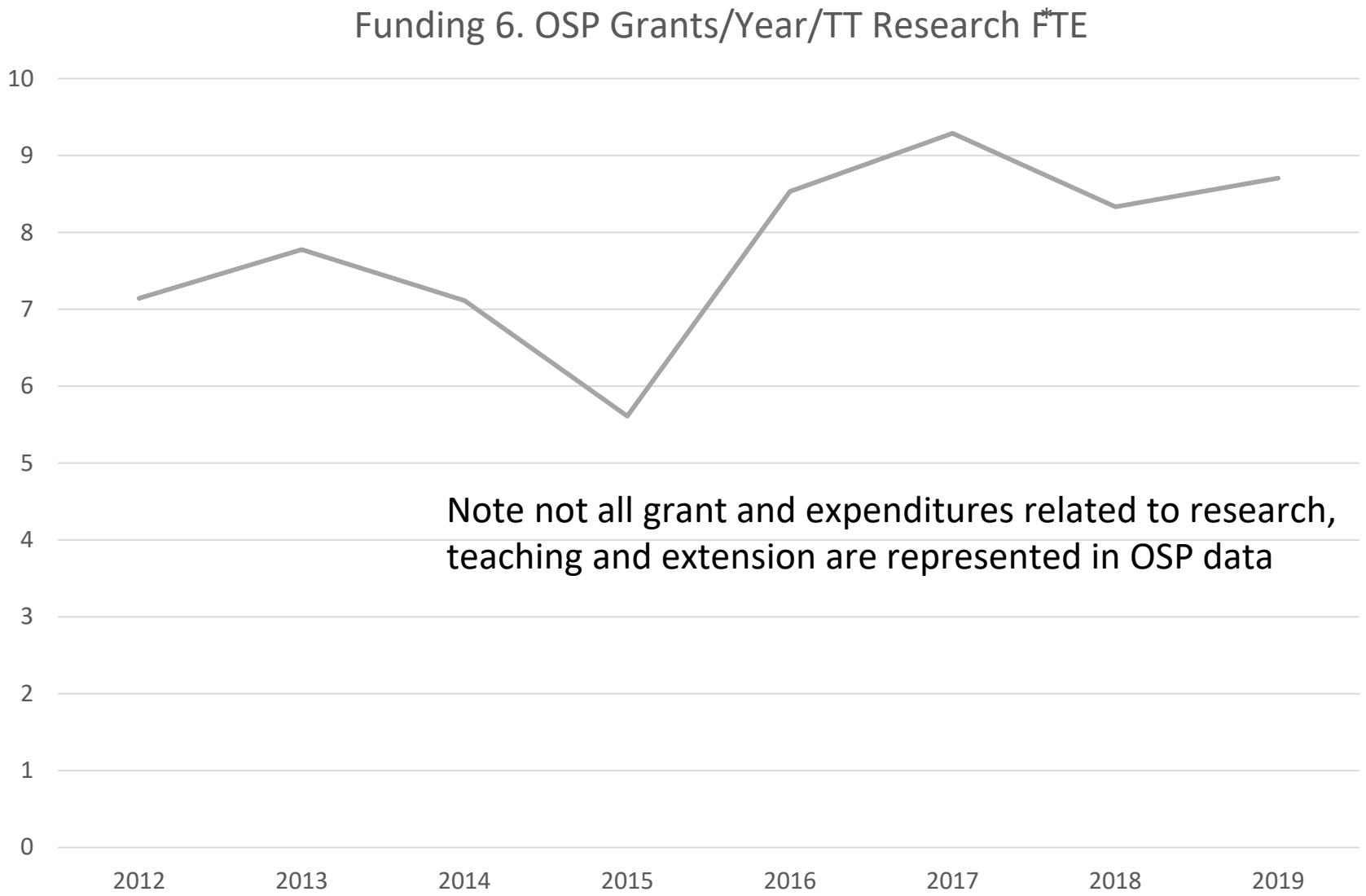

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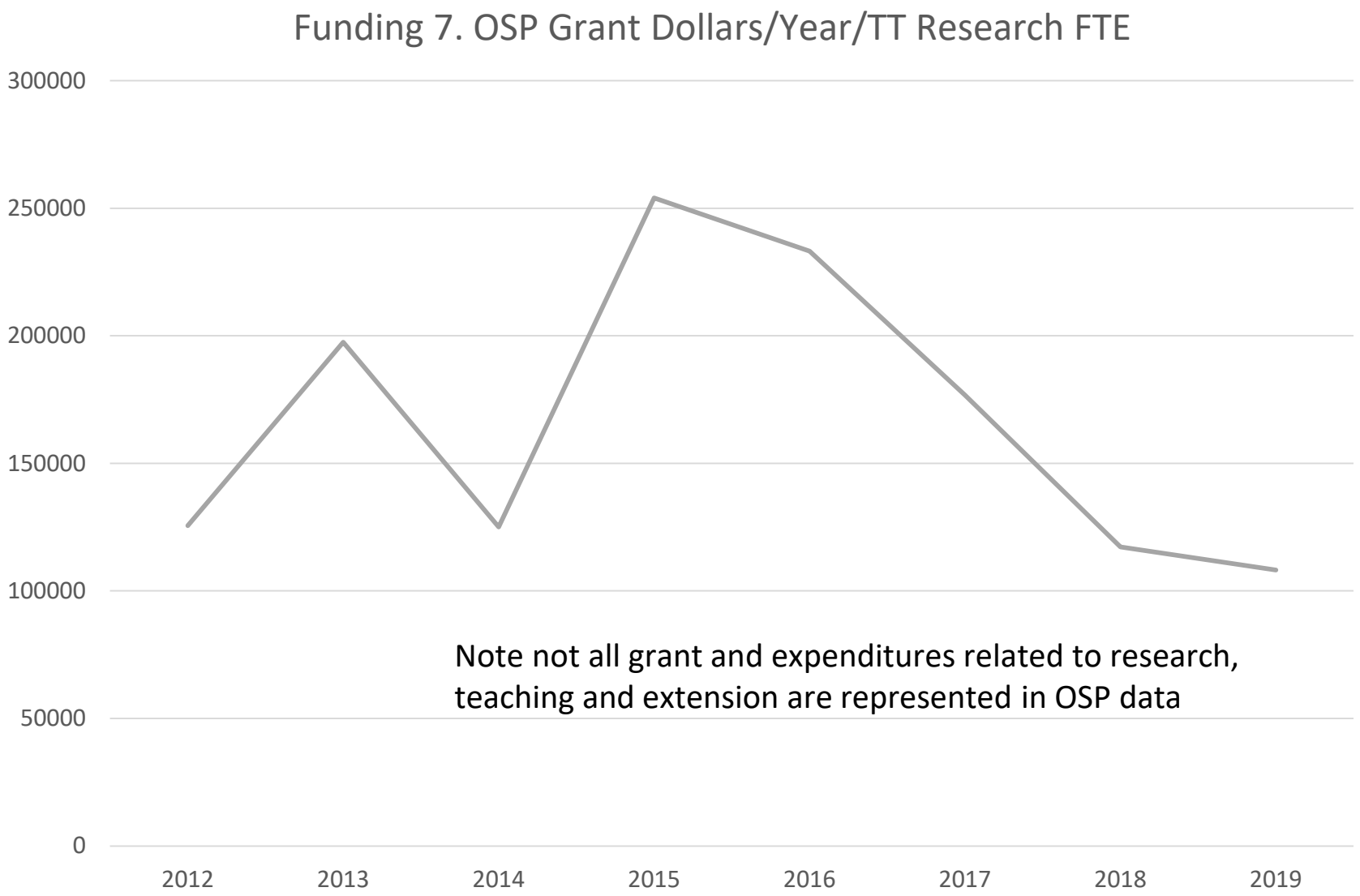

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Funding 8. OSP Recorded Expenditures

	2012	2013	2014	2015	2016	2017	2018	2019
Bass, Thomas	$189,625	$168,808	$169,953	$73,636	$78,154	$128,770	$70,023	$59,879
Berardinelli, James	$202	$500	$0	$0	$0	$0	$0	na
Boles, Jane	$18,112	-$19	$0	$0	$0	$0	$0	$0
Bowman, Janice	$8,000	$0	$0	$0	$0	$0	$0	$0
Carr, Craig	$0	$0	$13,395	$24,691	$68,811	$52,503	$54,909	$47,944
DelCurto	na	na	na	na	$0	$0	$0	$0
Duff, Glenn	$0	$21,450	$6,480	$49,370	na	na	na	na
Endecott, Rachel	$415	$1,393	$1,756	$2,235	$2,512	$29,070	$2,552	na
Frost, Rachel	na	$18,009	$4,800	-$69	na	na	na	na
Goosey, Hayes	$90,998	$122,972	$129,779	$81,597	$68,448	$47,216	$18,327	$25,852
Hatfield, Patrick	$271,490	$442,225	$288,252	$425,433	$344,673	$92,752	$20,072	na
Johnson, Greg	$0	$6,260	$36,465	$48,046	$65,809	$41,294	na	na
Knight, James	$9,820	$11,525	$8,496	$17,568	na	na	na	na
Kott, Rodney	$166,567	$95,241	$35,739	$5,262	na	na	na	na
Marlow, Clayton	$44,253	$57,930	$34,061	$57,932	$67,065	$104,372	-$36,641	$20,603
McNew, Lance	na	na	na	$6,554	$80,346	$182,028	$220,960	$124,788
Meccage, Emily	na	na	na	na	$9,476	$53,940	$87,782	$366
Moreaux, Shannon	$0	$0	$0	$0	$18,679	$35,424	$7,032	na
Mosley, Jeffrey	$166,096	$138,008	$50,234	$27,826	$58,544	$41,544	$13,327	$55,149
Murphy, Tom	na	na	na	na	na	$3,394	$21,137	$74,365
Olson, Bret	$26,494	$72,463	$33,338	$21,705	$27,459	$28,271	$22,111	$34,454
Paterson, John	$16,466	na	na	na	na	na	na	na
Ragen, Devon	na	na	na	na	na	$9,253	$17,488	$36,444
Rolston, Marni	na	na	na	na	na	$7,416	$62,963	$53,094
Sowell, Bok	$782	$409	$87,420	$193,911	$192,483	$130,604	$108,757	$70,692
Stewart, Whitney	na	na	na	na	$81,133	$47,664	$10,866	$3,409
Surber, Lisa	na	na	$27,773	$37,375	-$4,496	na	na	na
Tharp, Cecil	$19,867	$6,849	$12,394	$30,209	$61,597	$69,553	$21,202	$56,498
Thomson, Jennifer	na	na	$0	$0	$69,838	$112,234	$115,357	$41,002
Van Emon, Megan	na	na	na	na	$10,864	$36,866	$970	$1,362
Yeoman, Carl	na	na	$56,132	$555,381	$446,232	$360,627	$160,751	$138,443
grand total	$1,029,187	$1,164,023	$996,467	$1,658,662	$1,747,627	$1,614,795	$999,945	$844,344

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Funding 9. OSP Number of Recorded Grants

		Teaching on and off campus Appt %	Research Appt %	2012	2013	2014	2015	2016	2017	2018	2019
number of faculty											
				14	13	15	16	18	19	18	15
Berardinelli, James	Retired	0.42	0.48	2	1	0	0	0	0	0	na
Boles, Jane	current	0.67	0.23	1	1	0	0	0	0	0	0
Bowman, Janice	Retired	0.40	0.50	1	0	0	0	0	0	0	0
Carr, Craig	current	0.50	0.40	0	0	1	3	3	2	1	2
DelCurto, Tim	current	0.30	0.60	na	na	na	na	0	0	0	0
Duff, Glenn	Retired	0.10	0.20	0	1	1	1	na	na	na	na
Hatfield, Patrick	current	0.10	0.20	4	4	4	2	4	3	2	na
Johnson, Greg	Retired	0.56	0.34	0	1	1	1	1	2	na	na
Kott, Rodney	Retired	0.70	0.20	4	5	4	2	na	na	na	na
Marlow, Clayton	current	0.70	0.20	4	3	5	5	3	6	5	5
McNew, Lance	current	0.23	0.67	na	na	na	2	6	7	8	5
Meccage, Emily	Retired	0.77	0.13	na	na	na	na	2	3	3	3
Moreaux, Shannon	Retired	0.80	0.10	0	0	0	0	1	1	1	na
Mosley, Jeffrey	current	0.70	0.20	7	6	5	3	5	4	2	1
Murphy, Tom	Retired	0.30	0.60	na	na	na	na	na	1	5	6
Olson, Bret	current	0.45	0.45	3	4	7	5	3	2	2	3
Paterson, John	Retired	0.70	0.20	3	na	na	na	na	na	na	na
Sowell, Bok	current	0.80	0.10	1	2	1	2	6	7	6	3
Stewart, Whitney	Retired	0.77	0.13	na	na	na	na	5	7	4	3
Thomson, Jennifer	current	0.36	0.54	na	na	0	0	4	5	5	6
Van Emon, Megan	current	0.67	0.23	na	na	na	na	1	3	3	1
Yeoman, Carl	current	0.36	0.54	na	na	3	3	6	7	4	5
		11.36	7.24	30	28	32	29	50	60	51	43

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Funding 10. OSP Percent of Grant Dollars by Faculty (TT and NTT) and Professional Staff Member

	2012	2013	2014	2015	2016	2017	2018	2019
Bass, Thomas	18%	15%	17%	4%	4%	8%	7%	7%
Berardinelli, James	0%	0%	0%	0%	0%	0%	0%	na
Boles, Jane	2%	0%	0%	0%	0%	0%	0%	0%
Bowman, Janice	1%	0%	0%	0%	0%	0%	0%	0%
Carr, Craig	0%	0%	1%	1%	4%	3%	5%	6%
DelCurto, Tim	na	na	na	na	0%	0%	0%	0%
Duff, Glenn	0%	2%	1%	3%	na	na	na	na
Endecott, Rachel	0%	0%	0%	0%	0%	2%	0%	na
Frost, Rachel	na	2%	0%	0%	na	na	na	na
Goosey, Hayes	9%	11%	13%	5%	4%	3%	2%	3%
Hatfield, Patrick	26%	38%	29%	26%	20%	6%	2%	na
Johnson, Greg	0%	1%	4%	3%	4%	3%	na	na
Knight, James	1%	1%	1%	1%	na	na	na	na
Kott, Rodney	16%	8%	4%	0%	na	na	na	na
Marlow, Clayton	4%	5%	3%	3%	4%	6%	-4%	2%
McNew, Lance	na	na	na	0%	5%	11%	22%	15%
Meccage, Emily	na	na	na	na	1%	3%	9%	0%
Moreaux, Shannon	0%	0%	0%	0%	1%	2%	1%	na
Mosley, Jeffrey	16%	12%	5%	2%	3%	3%	1%	7%
Murphy, Tom	na	na	na	na	na	0%	2%	9%
Olson, Bret	3%	6%	3%	1%	2%	2%	2%	4%
Paterson, John	2%	na	na	na	na	na	na	na
Ragen, Devon	na	na	na	na	na	1%	2%	4%
Rolston, Marni	na	na	na	na	na	0%	6%	6%
Sowell, Bok	0%	0%	9%	12%	11%	8%	11%	8%
Stewart, Whitney	na	na	na	na	5%	3%	1%	0%
Surber, Lisa	na	na	3%	2%	0%	na	na	na
Tharp, Cecil	2%	1%	1%	2%	4%	4%	2%	7%
Thomson, Jennifer	na	na	na	0%	4%	7%	12%	5%
Van Emon, Megan	na	na	na	na	1%	2%	0%	0%
Yeoman, Carl	na	na	6%	33%	26%	22%	16%	16%
grand total	100%	100%	100%	100%	100%	100%	100%	100%

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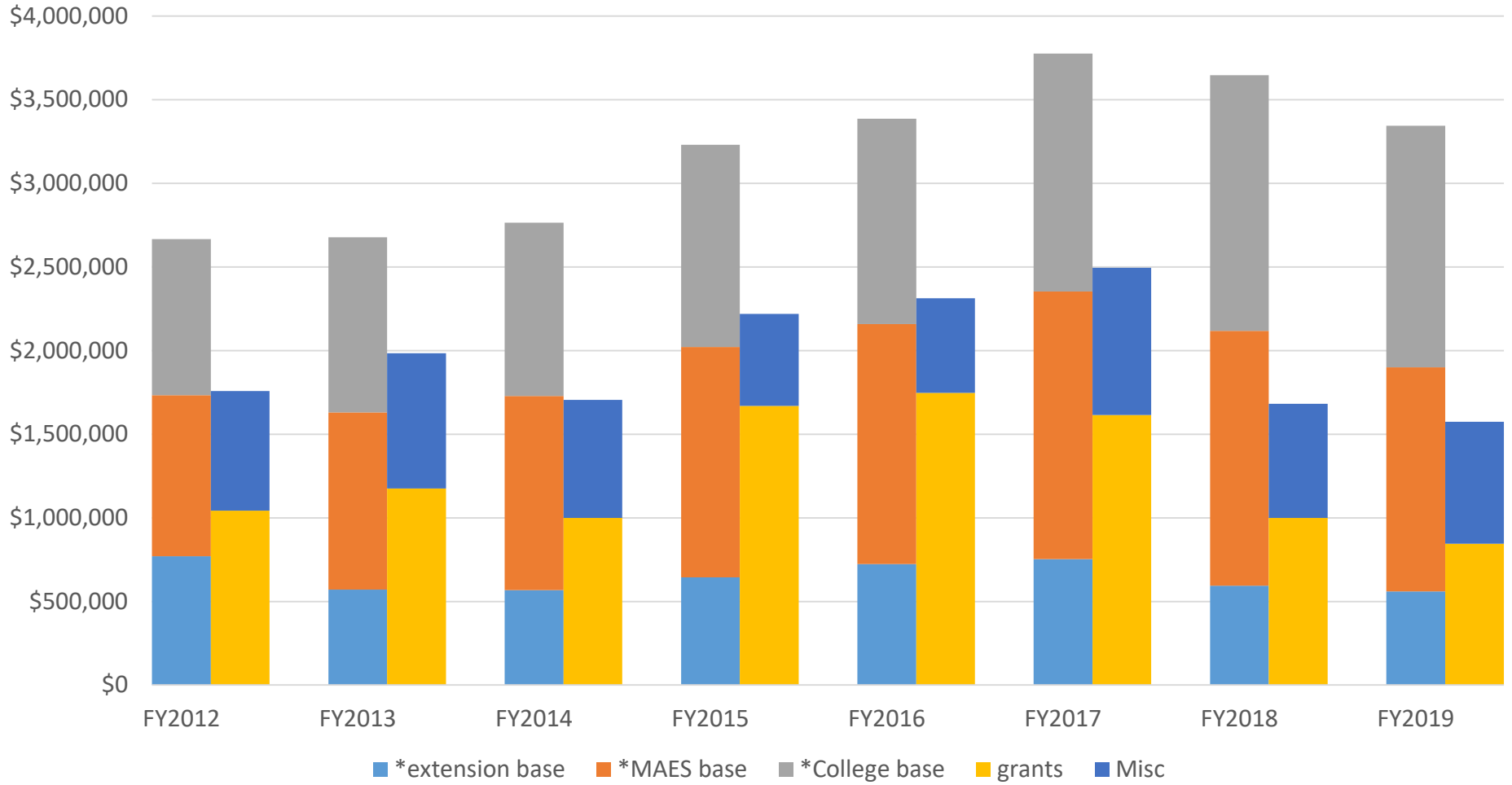
Funding 11. Animal and Range Sciences Support and Expenditures by Fiscal Year (from COA)
*Includes benefits paid by central pool



Misc is all of the expenditures in indexes that can record revenue. These include the Extension and MAES indexes that we can charge fees for service, all designated indexes to include student fees including the horseshoeing school, all program related indexes such as the meat lab, all indexes that foundation monies are tracked through, and all F&A/startup indexes.

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Publications 1. Peer Reviewed Scientific Publications by Faculty Member

	TEACHING ON CAMPUS	TEACHING OFF CAMPUS	RESEARCH	SERVICE	ADM	2012	2013	2014	2015	2016	2017	2018	2019
Berardinelli, James	42%	0	48%	10%				1	1				
Boles, Jane Ann	67%	0	23%	10%					1				2
Bowman, Jan	40%	0	50%	10%		1			1	2	2	2	2
Carr, Craig	50%	0	40%	10%				1		1	1	2	
DelCurto, Tim	30%	0	60%	10%						1			3
Duff, Glenn	10%	0	10%	10%	70%		1		2		1		
Endecott, Rachel	10%	75%	5%	10%					1		1	1	
Hatfield, Pat	10%	0	10%	10%	70%		4	2	4	4	1		1
Johnson, Greg	10%	54%	26%	10%			2	2	1	1			
Kott, Rodney	0%	70%	20%	10%		1	1	1		1	1		
Marlow, Clayton	70%	0	20%	10%				2		1	2		
McCoski, Sarah	30%	0	60%	10%				1			5	2	2
McNew, Lance	23%	0	67%	10%		2	3	3	4	4	3	4	6
Meccage, Emily	13%	64%	13%	10%						1	1	3	3
Moreaux, Shannon	62%	18%	10%	10%									
Mosley, Jeff	0	70%	20%	10%		2	2		1	2	1	5	1
Murphy, Tom	30%	0%	60%	10%							2	1	1
Olson, Bret	45%	0	45%	10%									
Roeder, Brent	0	77%	13%	10%			1			1	1		
Sanford, Carla	15%	60%	15%	10%									3
Sowell, Bok	80%	0	10%	10%		1		1	1	4	4	3	2
Stewart, Whit	0%	70%	20%	10%								1	1
Thomson, Jennifer	36%	0	54%	10%		2	2	2	1	2	1	2	1
Van Emon, Megan	0	67%	23%	10%					1			2	4
Yeoman, Carl	36%	0	54%	10%		5	6	8	9	7	5	4	10

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Bass, Tommy		100%						1					
Frisina, Michael (Adjunct)									1	2	1	1	1
Frost, Rachel						1	1			2	1		
Ragen, Devon							1		1	3			1
Wyffels, Sam												1	4
Goosey, Hayes							2		2	1			1
Todd (Kellom), Allison							1		1	3		1	
Cash, S.D.										1			
Wambolt, C.										2	1		
Paterson, J										2			
DelCurto Wyffels, H													1
Graduate Students						1	6	5	5	17	6	7	12
Hager, J (Staff)										1			

Publications 2. Peer Reviewed Scientific Publications by Year

2012	2013	2014	2015	2016	2017	2018	2019	Total
10	16	20	27	27	19	21	28	168

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Publication 3. Peer Reviewed MAES and Extension Publications by Faculty Member

	TEACHING ON CAMPUS	TEACHING OFF CAMPUS	RESEARCH	SERVICE	ADM/OTHER	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bass, Tommy												2		
Boles, Jane Ann	67%	0	23%	10%					2	2			1	
Bowman, Jan	40%	0	50%	10%										
Carr, Craig	50%	0	40%	10%					1					
DelCurto, Tim	30%	0	60%	10%										
Hatfield, Pat	10%	0	20%	10%	60%				1	1				
Marlow, Clayton	70%	0	20%	10%										
McCoski, Sarah	**30%**	**0**	**60%**	**10%**										
McNew, Lance	23%	0	67%	10%						1	1	3		
Meccage, Emily	13%	64%	13%	10%					1	2	1			
Moreaux, Shannon	62%	18%	10%	10%										
Mosley, Jeff	0	70%	20%	10%		22	2	4	5	5	2	2		
Olson, Bret	45%	0	45%	10%										
Roeder, Brent	0	77%	13%	10%					3	1	1	4		
Sanford, Carla	15%	60%	15%	10%										
Sowell, Bok	80%	0	10%	10%										
Thomson, Jennifer	36%	0	54%	10%						4				
Van Emon, Megan	0	67%	23%	10%				1		2			1	
Yeoman, Carl	36%	0	54%	10%										
Frost, Rachel						20			3	2	1	1		
Ragen, Devon										1				
Rolston, Marni						2						1		
Tharp, Cecil							1	2	11	5	4		5	
Berardinelli, James										3				
Endecott, Rachel								1		1				
Johnson, Greg						2						1		
Stewart, Whit										1				
Kott, Rodney											1			

Publications 4. Peer Reviewed MAES and Extension Publications by Year

2012	2013	2014	2015	2016	2017	2018	2019	Total
24	3	7	18	19	8	10	6	95

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Publications 5. Software, Video, Web and other Media by Year

2012	2013	2014	2015	2016	2017	2018	2019	Total
31	4	43	52	76	60	63	31	360

note - 2014 was the first year using activity insight. 2012 and 2013 are a composite of updated activity insight, hard copy files, and estimates

Publications 6. Reviewed Publications and Technical Reports by Year

2012	2013	2014	2015	2016	2017	2018	2019	Total
3	7	12	14	13	7	14	4	74

Publication 7. Popular Press, Other Publications and Posters by Year

2012	2013	2014	2015	2016	2017	2018	2019	Total
26	22	38	39	38	29	28	4	224

Publication 8. Other Scientific Presentations and Posters by year

2012	2013	2014	2015	2016	2017	2018	2019	Total
37	24	67	75	73	57	55	42	430

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Extension/Outreach/Engagement 1. Teaching Presentations (2014-2019; data incomplete from 2013)

Faculty Name	Ext FTE	2014		2015		2016		2017		2018		2019		Mean/Year		Mean	Mean
		n	Participants	n	Participants	n	Participants	n	Participants	n	Participants	n	Participants	n	Participant	n/FTE	Participants/FTE
Extension Teaching Faculty																	
Bass, Thomas	1.00	15	748	13	828	16	538	17	873	18	361	17	304	16	609	16	609
Endecott, Rachel	0.85	25	2049	26	2108	32	966	28	800					26	1652	31	1944
Johnson, Gregory	0.54	7	453	10	369	4	699							7	507	13	939
Meccage, Emily	0.64	8	313	40	1880	30	1270	34	1617	37	1710			30	1358	47	2122
Moreaux, Shannon	0.20	4	130	11	262	16	540	0	0	12	249			9	236	43	1181
Mosley, Jeff	0.70	29	2451	21	2406	42	1376	27	2264	38	2478	44	2759	34	2289	48	3270
Roeder, Brent	0.67							23	1655	25	1318	20	1290	23	1421	34	2121
Sanford, Carla	0.60											22	745	22	745	37	1242
Stewart, Whit	0.77					25	908							25	908	32	1179
Tharp, Cecil	1.00	50	1985	43	1344	59	1766	50	1817	51	2075	39	1727	49	1786	49	1786
Van Emon, Megan	0.67	5	134	35	1303	19	539	24	783	24	815	20	1278	21	809	32	1207
Subtotal		**143**	**8263**	**199**	**10500**	**243**	**8602**	**203**	**9809**	**205**	**9006**	**162**	**8103**				
Academic Teaching Faculty																	
Boles, Jane Ann		4	77	13	633	4	97	3	111	5	120	8	265				
Bowman, Jan										1	4						
DelCurto, Hannah		1	10	4	100	2	40	1	50	2	330	3	370				
Frost, Rachel												3	77				
McNew, Lance				1	30			1	25								
Shockley, Andrea						3	30	7	59	6	91	3	30				
Thomson, Jennifer		1	100	1	120	1	35			1	20	1	60				
Yeoman, Carl																	
Subtotal		**6**	**187**	**19**	**883**	**10**	**202**	**12**	**245**	**15**	**565**	**18**	**802**				
TOTAL		**149**	**8450**	**218**	**11383**	**253**	**8804**	**215**	**10054**	**220**	**9571**	**180**	**8905**				

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Service 1. Professional, Public and University Service

	2012	2013	2014	2015	2016	2017	2018	2019
Professional Service	29	23	71	88	62	65	73	32
Public Service	no record	7	36	25	13	23	13	13
Department, College, and University Service	15	24	47	60	57	77	62	55

Note: some items listed by faculty in activity insight –service are extension/outrearch in nature

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Service 2. Department, College and University Service by faculty Member 2013 to 2019 (from activity insight general service report)

	Department	College	University
Tommy Bass	2	1	2
James Berardinelli	6	1	5
Jane Boles	8	3	1
Jan Bowman	20	5	2
Craig Carr	4	3	8
Hannah DelCurto	4		1
Tim DelCurto	7	4	5
Rachel Endecott	7	8	3
Rachel Frost	2		
Patrick Hatfield	6	6	5
Greg Johnson	4		1
Clayton Marlow	13	15	5
Sarah McCoski	3		1
Lance McNew	6	1	7
Emily Meccage	2	4	3
Shannon Moreaux	19	7	12
Jeff Mosley	18	7	1
Thomas Murphy	3		
Bret Olson	6	1	2
Brent Roeder	4	2	
Carla Sanford	3		
Andi Shockley	4	11	10
Bok Sowell	12	1	2
Whit Steward	2	2	
Cecil Tharp		1	
Jennifer Thomson	9	1	10
Megan Van Emon	5	3	5
Carl Yeoman	13	5	15

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Enrollment, Retention, and Graduation. 1. Data from Provost Office

DEGREE	MAJOR 1, 2, 2nd DEGREE		CONC	2012	2013	2014	2015	2016	2017	2018	2019
BS	Animal Science	Equine Science	ASEQ	84	87	83	91	91	87	87	77
BS	Animal Science	Livestock Mgmt & Industry	ASLV	71	90	90	101	103	87	83	96
BS	Animal Science	Science	ASSE	71	68	69	73	99	83	103	107
BS	Natural Resources & Rangeland Ecol	Rangeland Ecology & Mgmt	RGEM	53	42	33	37	41	38	33	35
BS	Natural Resources & Rangeland Ecol	Wildlife Habitat Ecology & Mgmt	WHEM	47	37	43	52	45	38	35	46
BS	Ranching Systems		RSMG								1
BS	Sustainable Food and Bioenergy	Sustainable Livestock Production	SFLP	3	3	3	4	5	5	6	3
TOTAL UNDERGRADUATE ENROLLMENT:				***329***	***327***	***321***	***358***	***384***	***338***	***347***	***365***
MS	Animal and Range Sciences	Animal and Range Sciences	ANRS	18	11	14	18	20	15	14	15
PHD	Animal and Range Sciences	Animal and Range Sciences	ANRS	3	5	5	5	6	7	6	3
PHD	Ecology & Environmental Sciences	Ecology & Environmental Sciences	ESEC				1	3	2	4	4
TOTAL GRADUATE ENROLLMENT:				***21***	***16***	***19***	***24***	***29***	***24***	***24***	***22***
TOTAL ENROLLED:				***350***	***343***	***340***	***382***	***413***	***362***	***371***	***387***

AWARDED DEGREES

DEGREE	MAJOR	OPTION	CONC	AY12	AY13	AY14	AY15	AY16	AY17	AY18	AY19
BS	Animal Science	Equine Science	ASEQ	16	7	13	14	12	5	10	13
BS	Animal Science	Livestock Mgmt & Industry	ASLV	15	21	16	19	20	28	25	20
BS	Animal Science	Science	ASSE	15	9	25	23	12	21	16	17
BS	Natural Resources & Rangeland Ecol	Rangeland Ecology & Mgmt	RGEM	5	10	14	6	10	6	11	4
BS	Natural Resources & Rangeland Ecol	Wildlife Habitat Ecology & Mgmt	WHEM	8	14	6	8	4	12	9	12
BS	Sustainable Food and Bioenergy	Sustainable Livestock Production	SFLP		1	1	2				1
MS	Animal and Range Sciences	Animal and Range Sciences	ANRS	12	10	5	6	5	7	10	3
PHD	Animal and Range Sciences	Animal and Range Sciences	ANRS				1			1	1
PHD	Ecology & Environmental Sciences	Ecology & Environmental Sciences	ESEC								1
TOTAL DEGREES AWARDED:				***71***	***72***	***80***	***79***	***63***	***79***	***82***	***72***

AWARDED MINORS

	MINOR DESCRIPTION		CONC	2012	2013	2014	2015	2016	2017	2018	AY20
	Animal Science		ANS	5	5	8	5	1	3	2	2
	Genetics		GNTC	1	1	6	4	7	4	11	17
	Natural Resources & Rangeland Ecol		NRRE		4	1		2	1	2	
TOTAL MINORS AWARDED:				***6***	***10***	***15***	***9***	***10***	***8***	***15***	***19***

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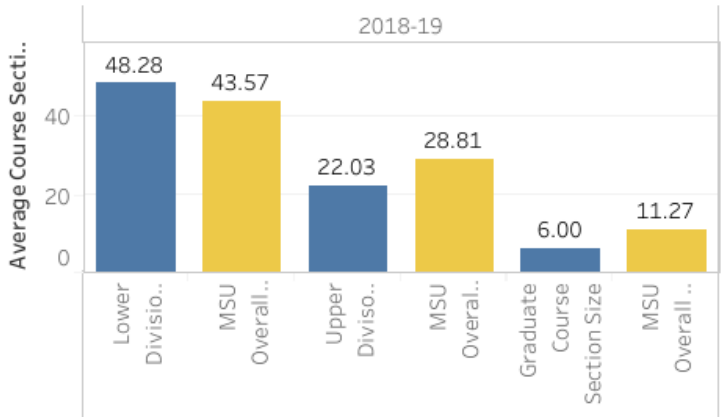
INSTRUCTION - Productivity Data

Animal & Range Sciences

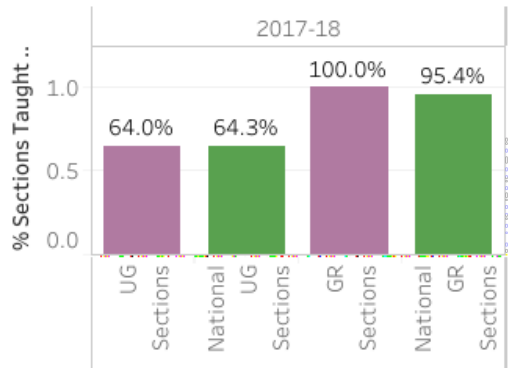
Enrollment, Retention, and Graduation 2. Department Overview

Average Size Course Section



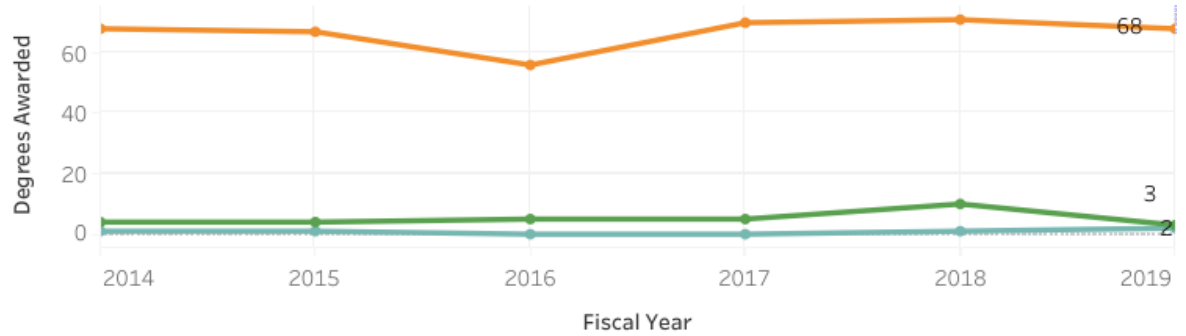
	2018-19
Lower Division Course Section Size	48.28
MSU Overall Lower Division Course Section Size	43.57
Upper Divison Course Section Size	22.03
MSU Overall Upper Divison Course Section Size	28.81
Graduate Course Section Size	6.00
MSU Overall Graduate Course Section Size	11.27

% Sections Taught by TT Faculty



	2017-18
UG Sections	64.0%
National UG Sections	64.3%
GR Sections	100.0%
National GR Sections	95.4%

Degrees Awarded



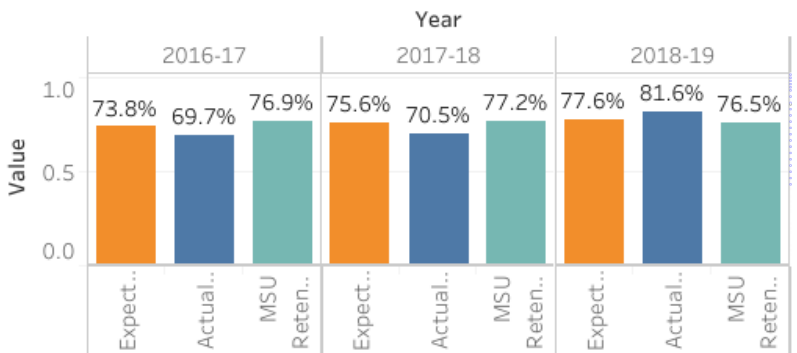
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Degrees (Certificat..						
Degrees (Associat..						
Degrees (Bachelors)	68	67	56	70	71	68
Degrees (Masters)	4	4	5	5	10	3
Degrees (Doctoral)	1	1	0	0	1	2

Measure Names
- Degrees (Certificates)
- Degrees (Associates)
- Degrees (Bachelors)
- Degrees (Masters)
- Degrees (Doctoral)

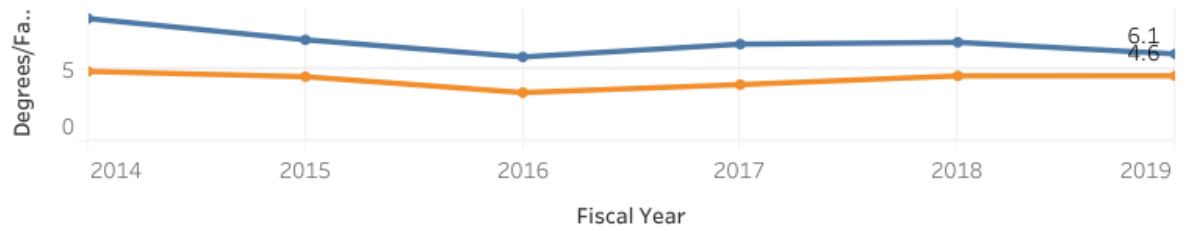
Student Credit Hours

	2018-19
SCH Total	5,501
SCH/TT Instructional FTE	810
SCH/NTT FTE	1,058
SCH/Faculty Instructional FTE & GTA	380

Retention



Degrees per Faculty FTE



	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Degrees/TT FTE	4.9	4.5	3.4	3.9	4.6	4.6
Degrees/Instr Faculty FTE	8.6	7.1	5.9	6.8	6.9	6.1

Measure Names
- Degrees/TT FTE
- Degrees/Instr Facult..

Source: KPIs, Delaware Study of Instructional Costs and Productivity, OCHE Student Data Warehouse, Banner Student tables

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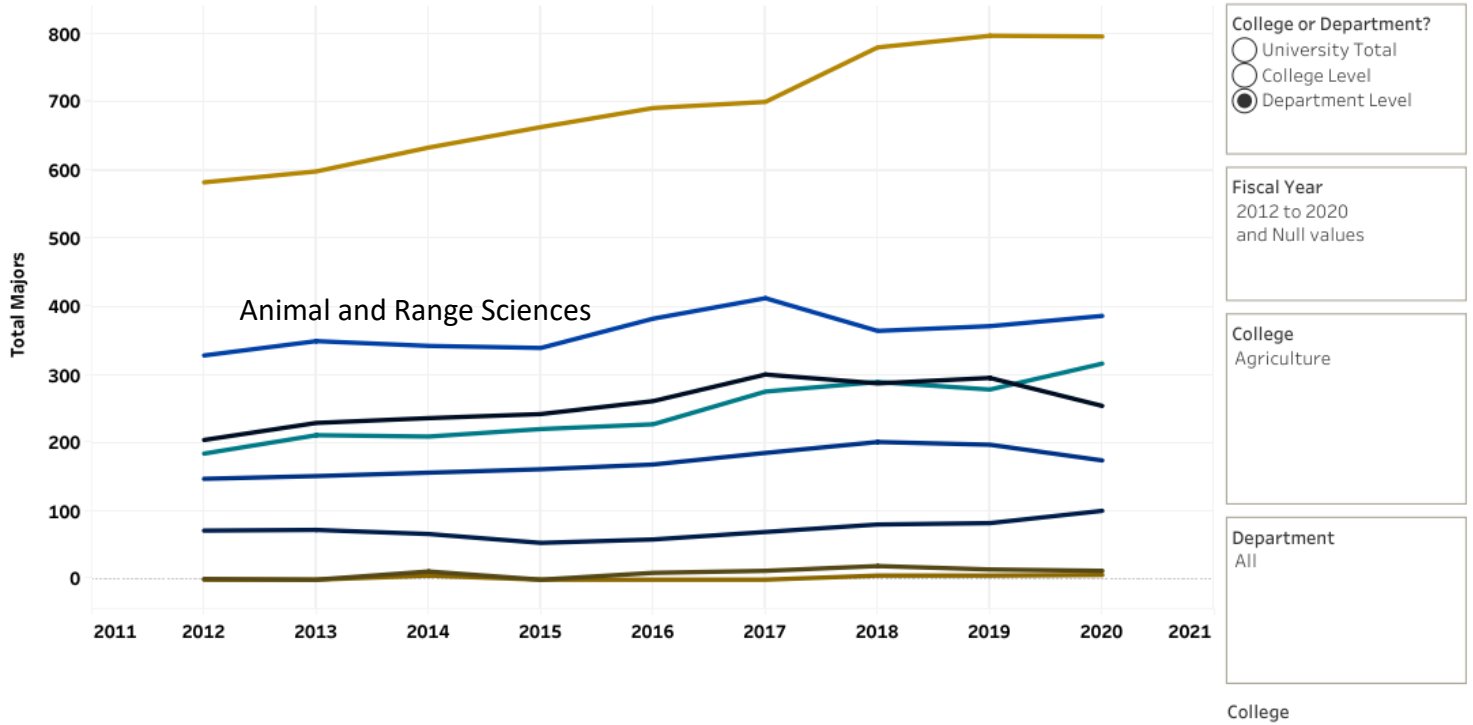
Enrollment, Retention, and Graduation 3. Total Majors Including other COA Departments and Department Diversity

Key Performance Indicators: Majors and Enrollment

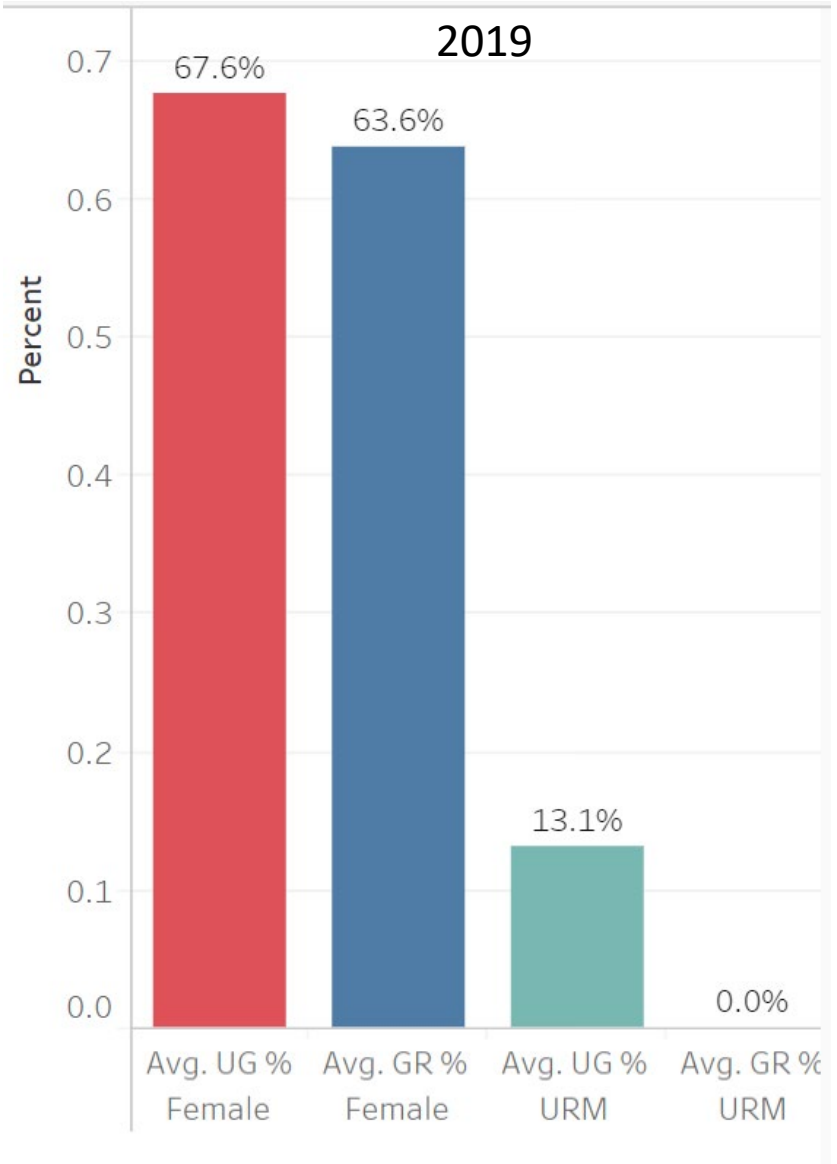
Definitions | **Total Majors** | Total Undergraduate Majors | Freshman/ Sophomore Majors | Junior/Senior/Post-Baccalaureate Majors | Graduate Majors | Second Majors

Total Majors



To Examine Total Enrollment by Department:
Scroll over the [+] button above "College" to see Total Enrollment by Department. *Students who are enrolled as Double Majors are counted twice in this metric.*

College	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	1,523.0	1,616.0	1,666.0	1,684.0	1,803.0	1,960.0	2,033.0	2,047.0	2,052.0
Grand Total	1,523.0	1,616.0	1,666.0	1,684.0	1,803.0	1,960.0	2,033.0	2,047.0	2,052.0



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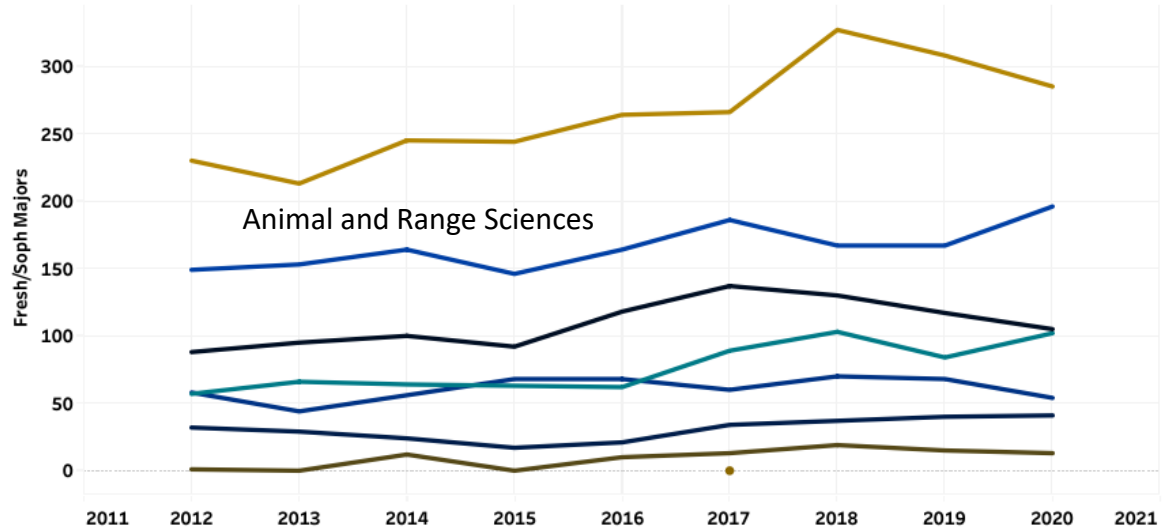
Enrollment, Retention, and Graduation 4. Freshman and Sophomore Majors Including other COA Departments

Key Performance Indicators: Majors and Enrollment

Definitions | Total Majors | Total Undergraduate Majors | **Freshman/ Sophomore Majors** | Junior/Senior/Post-Baccalaureate Majors | Graduate Majors | Second Majors

Freshman and Sophomore Majors



College or Department?
- University Total
- College Level
- Department Level

Fiscal Year
2012 to 2020
and Null values

College
Agriculture

Department
All

College

Freshman/Sophomore Majors By Department:

Scroll over the [+] button above "College" to see Freshman and Sophomore Majors by Department.

College	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	615.0	600.0	665.0	630.0	707.0	785.0	853.0	799.0	796.0
Grand Total	615.0	600.0	665.0	630.0	707.0	785.0	853.0	799.0	796.0

Department
- Ag. Economics & Economics
- Ag. Education
- Animal & Range Sciences
- Dean of Agriculture
- Entomology
- Land Resources & Environmen..
- Microbiology, Immunology, C..
- Plant Sciences & Plant Pathol..

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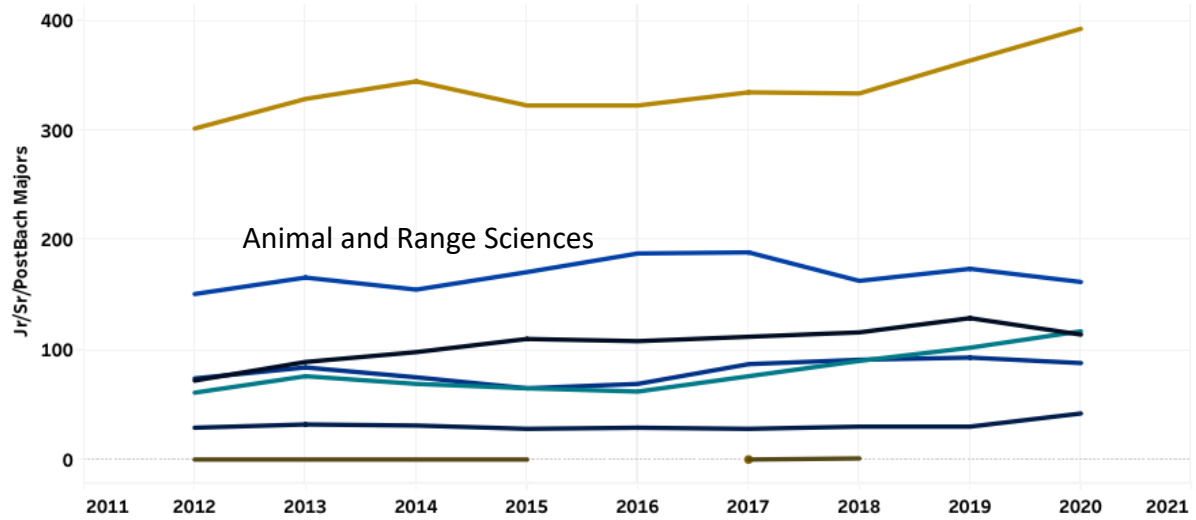
Enrollment, Retention, and Graduation 5. Junior, Senior, and Post Baccalaureate Majors Including other COA Departments

Key Performance Indicators: Majors and Enrollment

Total Majors | Total Undergraduate Majors | Freshman/ Sophomore Majors | **Junior/Senior/Post-Baccalaureate Majors** | Graduate Majors | Second Majors | Second Degree Majors

Junior, Senior and Post-Baccalaureate Majors



College or Department?
- University Total
- College Level
- Department Level

Fiscal Year
2012 to 2020
and Null values

College
Agriculture

Department
All

To Examine Upper Class Majors:
Scroll over the [+] button above "College" to see Upper Class Majors by Department.

College	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	689	776	773	762	779	827	825	892	916
Grand Total	689	776	773	762	779	827	825	892	916

College

Department
- Ag. Economics & Economics
- Ag. Education
- Animal & Range Sciences
- Dean of Agriculture
- Entomology
- Land Resources & Environ..
- Microbiology, Immunolog..
- Plant Sciences & Plant Pat..

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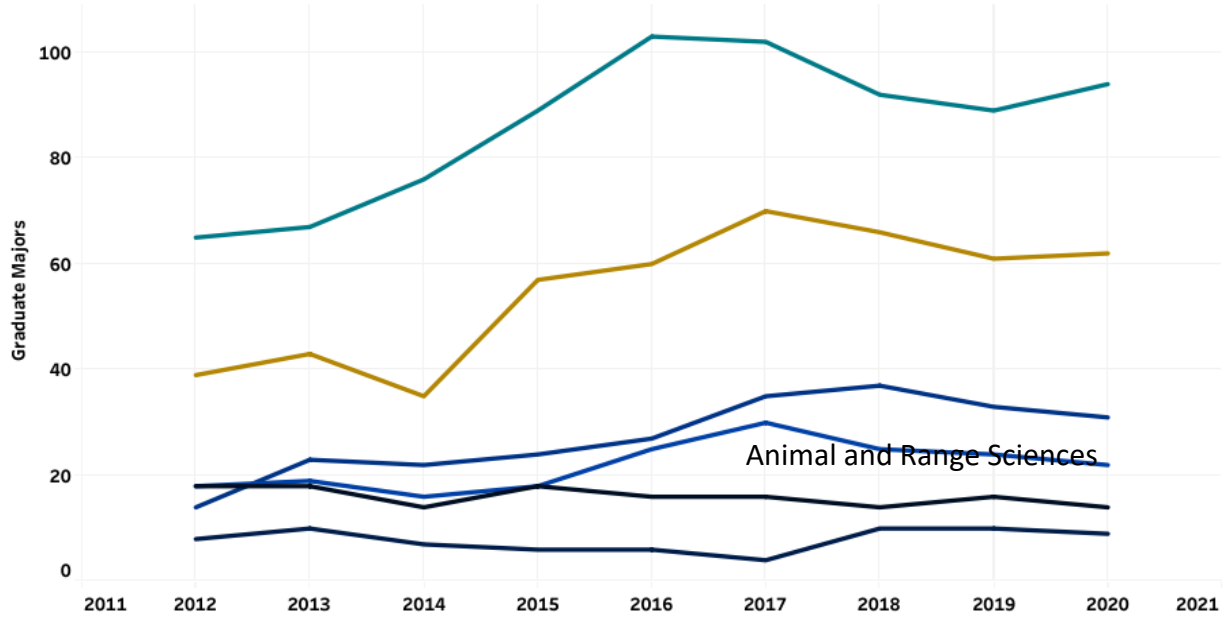
Enrollment, Retention, and Graduation 6. Graduate Majors Including other COA Departments

Key Performance Indicators: Majors and Enrollment

Total Undergraduate Majors | Freshman/ Sophomore Majors | Junior/Senior/Post-Baccalaureate Majors | **Graduate Majors** | Second Majors | Second Degree Majors | Majors Per Faculty

Graduate Majors at Montana State



College or Department?
- University Total
- College Level
- Department Level

Fiscal Year
2012 to 2020
and Null values

College
Agriculture

Department
Multiple values

College

To Examine Graduate Majors by Department:
Scroll over the [+] button above "College" to see Graduate Majors by Department. ***Honors, Gallatin College and University Studies do not offer Graduate Majors.***

College	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	162	180	170	212	237	257	244	233	232
Grand Total	162	180	170	212	237	257	244	233	232

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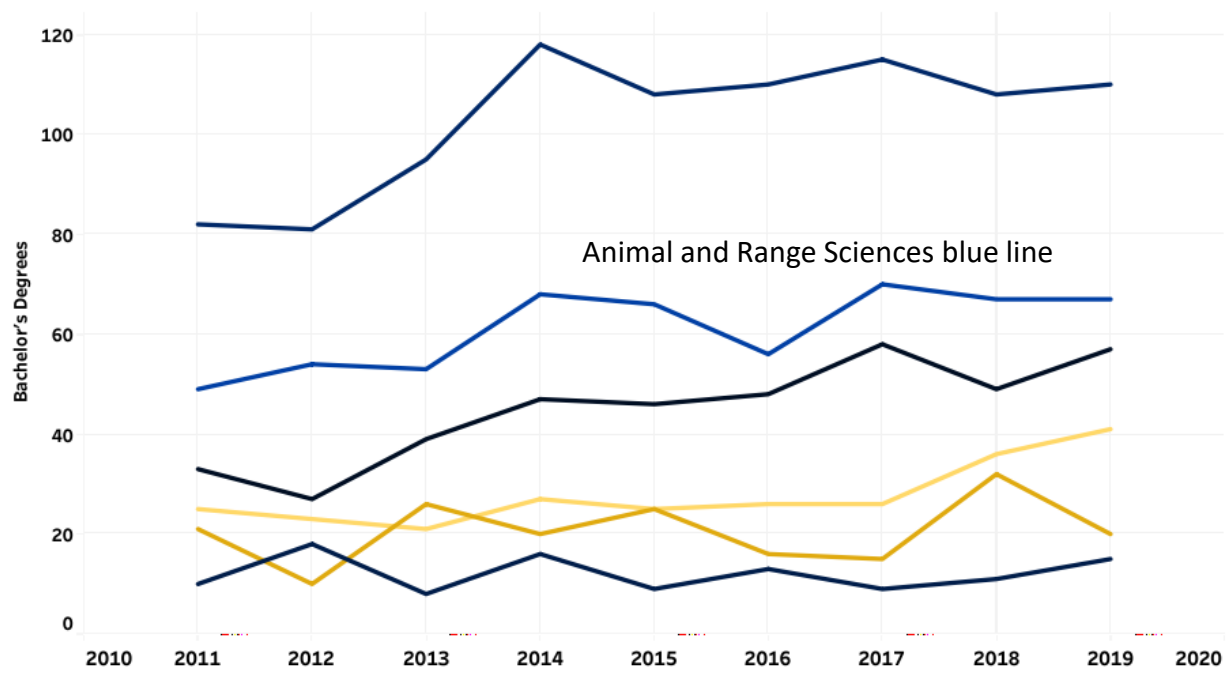
Key Performance Indicators: Degrees Awarded at Montana State

Definitions | **Total Degrees Awarded Over Time** | Associates Degrees and Certificates | Second Major Degrees

Total Degrees Awarded Bachelors



Degree Type
Bachelors

College or Department?
University Total
College Level
Department Level

Fiscal Year
2011 to 2019
and Null values

College
Agriculture

Department
Multiple values

Table: Degrees Awarded in a Single Year
Select a year to get the yearly breakdown of Bachelors', Masters, PhD and other degrees awarded. *To examine degrees by department, click on the [+] button above "College."*

College	Department	Associates	Bachelor's Degrees	Masters/Spec Degrees
Agriculture	Ag. Econom..		57.0	
	Ag. Educati..		15.0	
	Animal & Ra..		67.0	
	Land Resou..		20.0	
	Microbiolog..		110.0	
	Plant Scien..		41.0	

Select a year:
2019

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Enrollment, Retention, and Graduation 8. Master Degrees Awarded including other COA Departments

Key Performance Indicators: Degrees Awarded at Montana State

Definitions | **Total Degrees Awarded Over Time** | Associates Degrees and Certificates | Second Major Degrees

Total Degrees Awarded Masters

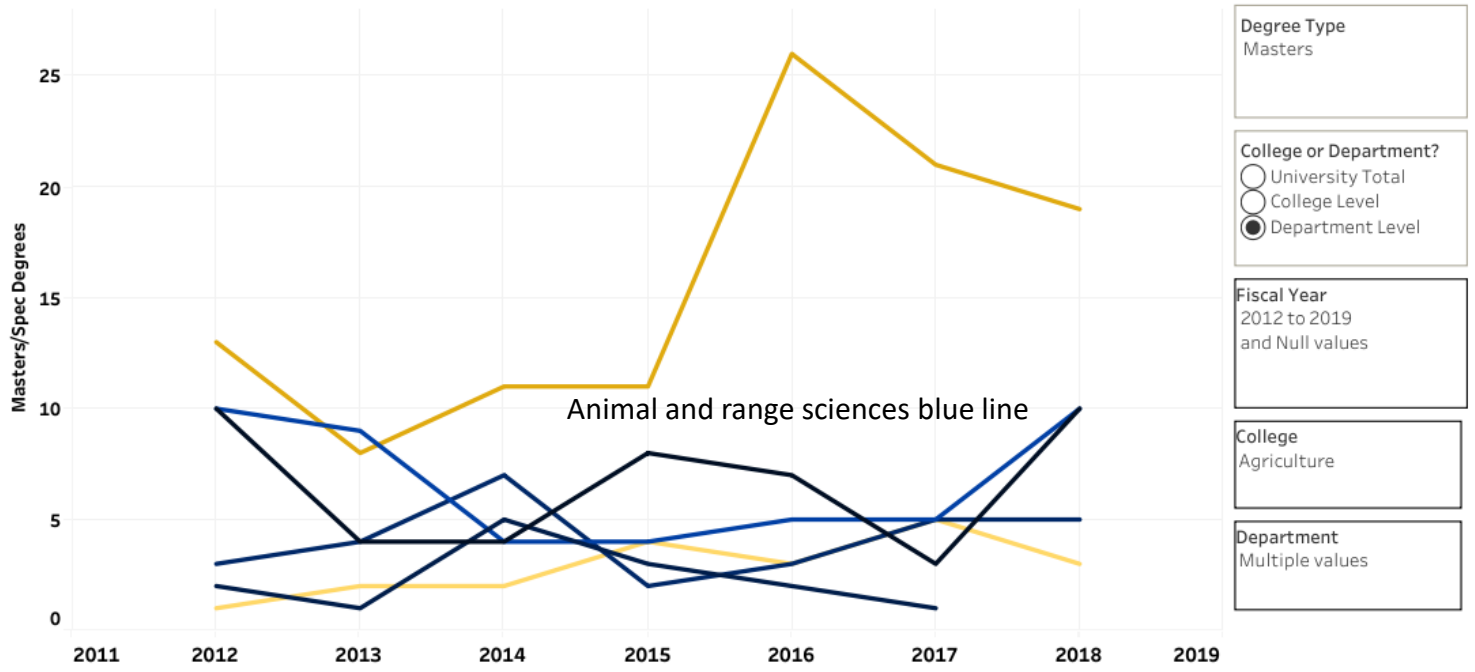

Table: Degrees Awarded in a Single Year

Select a year to get the yearly breakdown of Bachelors', Masters, PhD and other degrees awarded. *To examine degrees by department, click on the [+] button above "College."*

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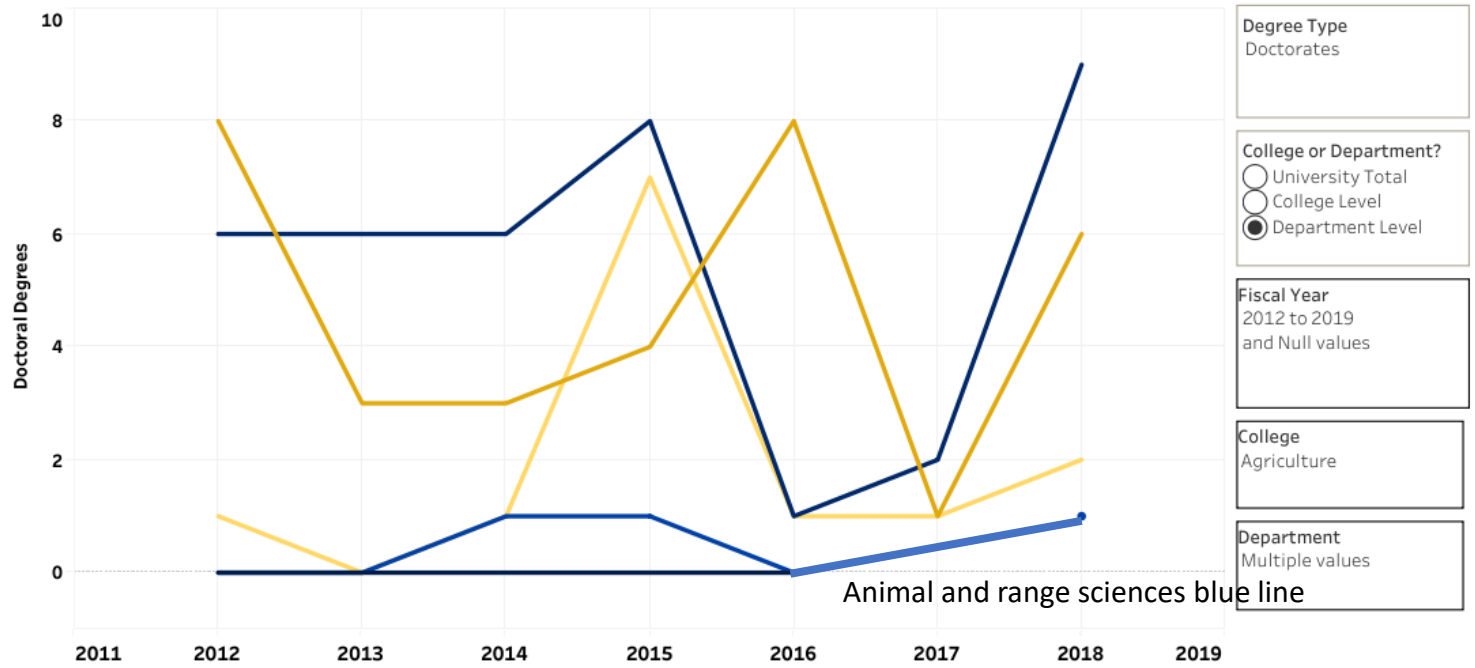
Enrollment, Retention, and Graduation 9. Doctorate Degrees Awarded including other COA Departments

Key Performance Indicators: Degrees Awarded at Montana State

Definitions | **Total Degrees Awarded Over Time** | Associates Degrees and Certificates | Second Major Degrees

Total Degrees Awarded

Doctorates



Animal and range sciences blue line

Table: Degrees Awarded in a Single Year

Select a year to get the yearly breakdown of Bachelors', Masters, PhD and other degrees awarded. *To examine degrees by department, click on the [+] button above "College."*

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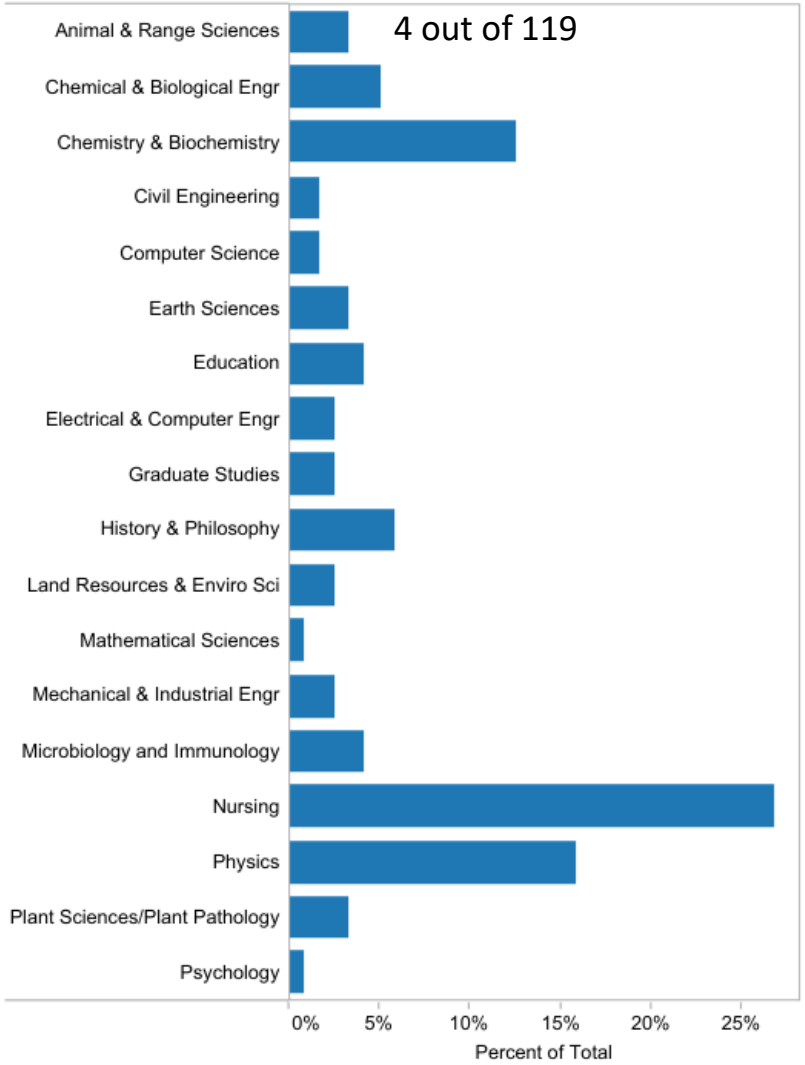
Enrollment, Retention, and Graduation 10. PhD students

Academic Year: 1819 **Degree:** Doctorate **Time Status:** All Time Status

Class Size:	Age (Average):	Age (Count):
119	28.6	119

Department



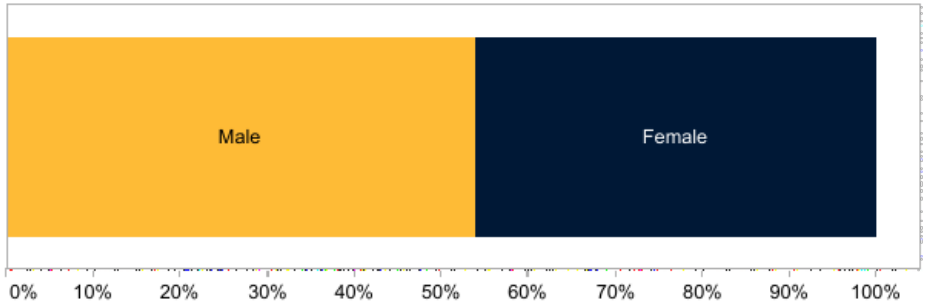
IPEDS Race

American Indian or Alaska Native	1.7%
Asian	3.4%
Black or African American	0.8%
Hispanic	4.2%
No Response	2.5%
Nonresident Alien	17.6%
Two or more races	5.0%
White	64.7%

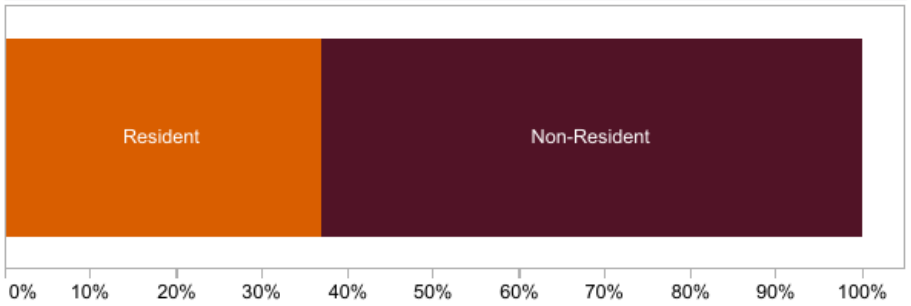
American Indian

No	89.9%
No Response	5.0%
Yes	5.0%

Gender



Residency



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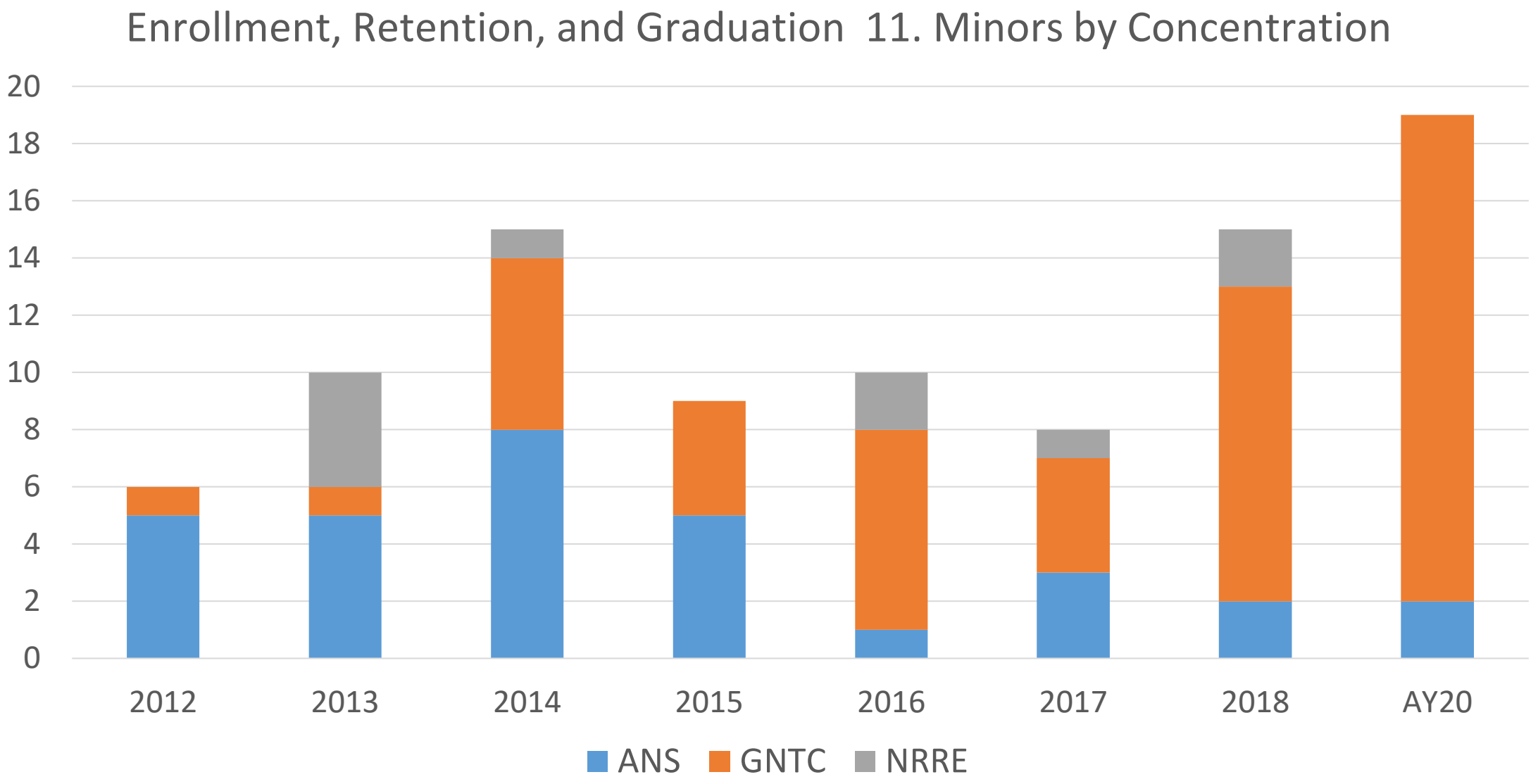
Select Academic Year: **Select Degree:** **Select Time Status:**



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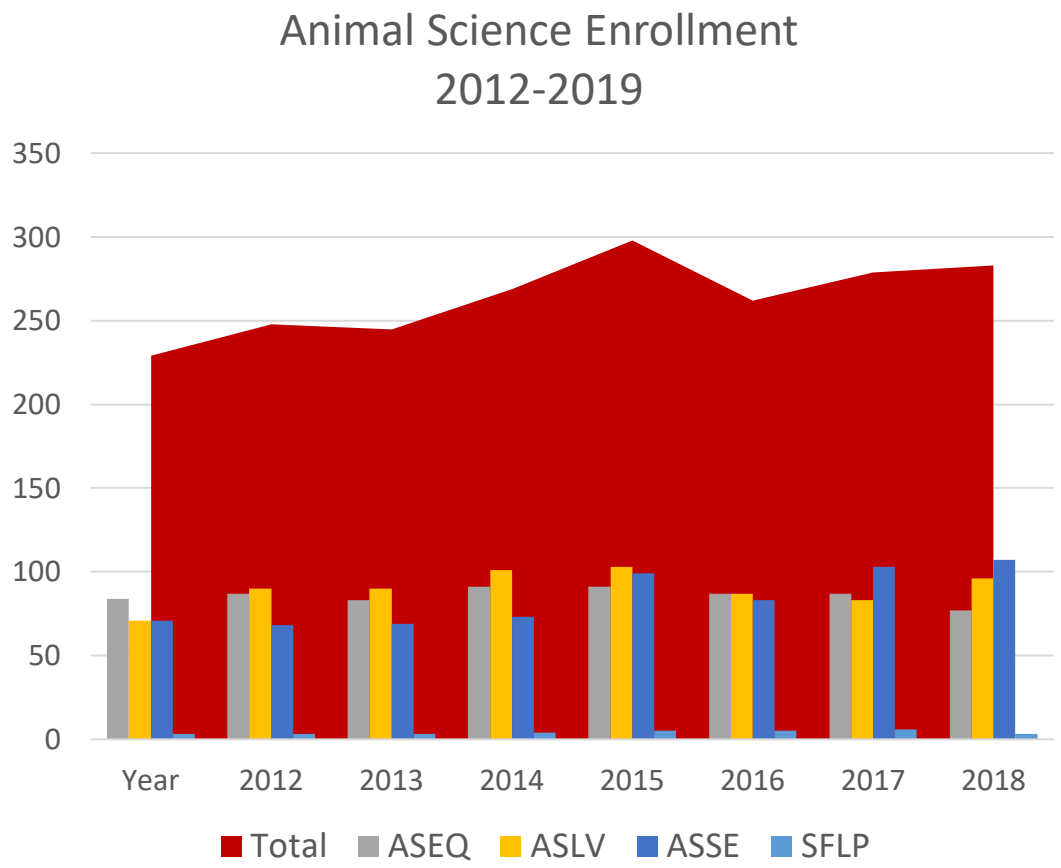
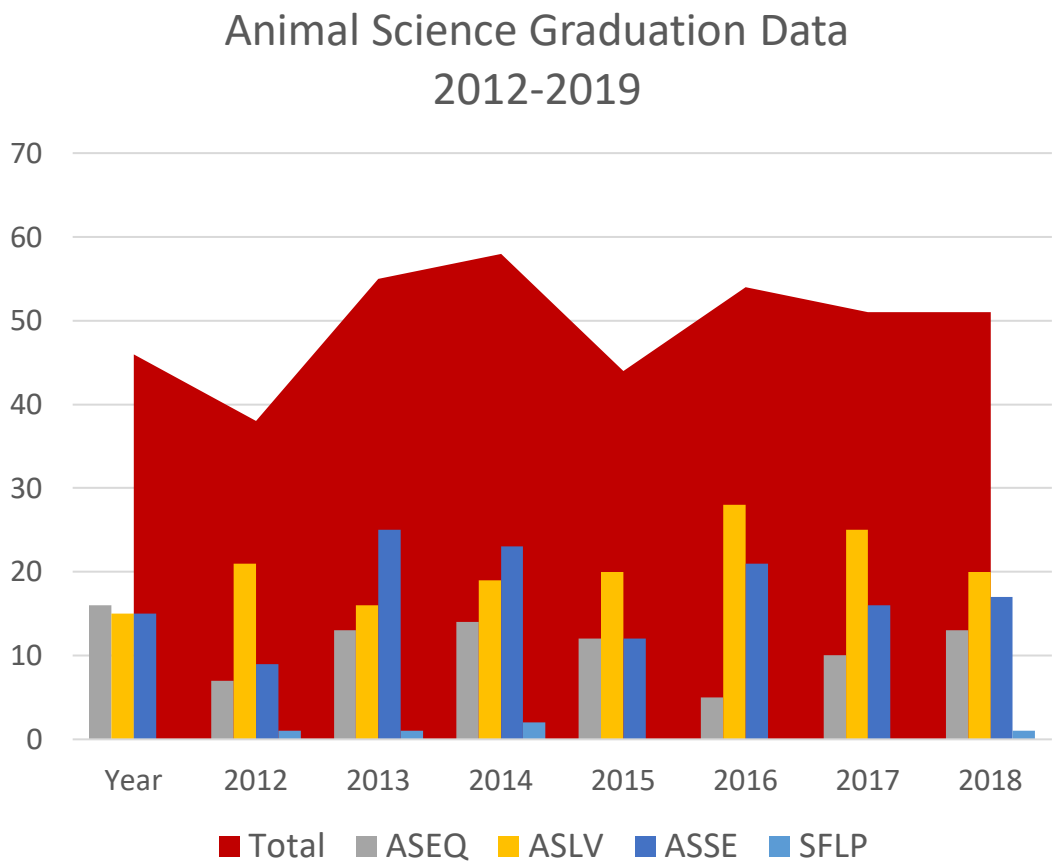
Enrollment, Retention, and Graduation 12. Animal Science Enrollment and Graduation Data





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Enrollment, Retention, and Graduation 13. Student Percent Retention and College of Agriculture Retention, fall to fall

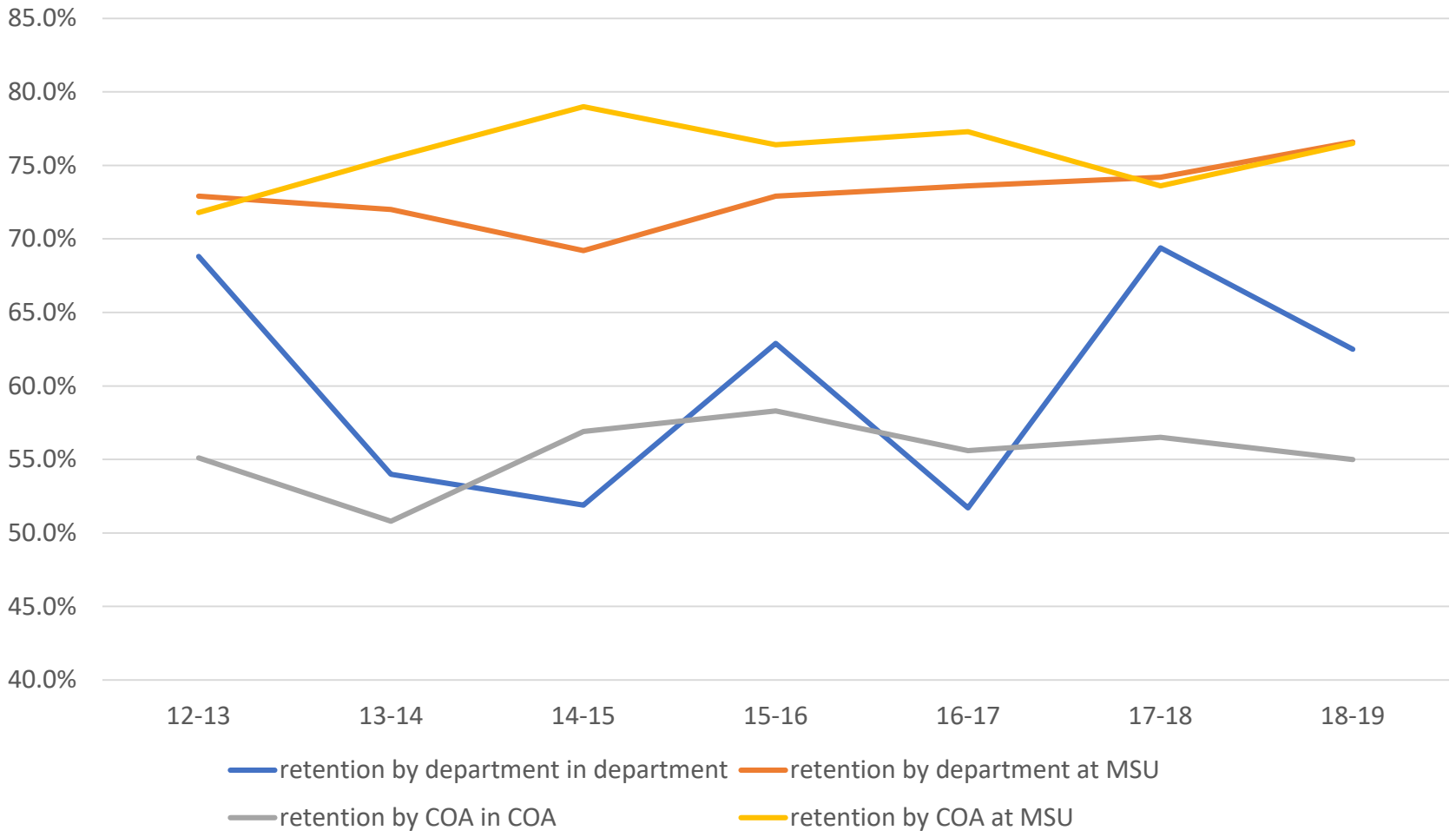

Tableau data provided by provost office

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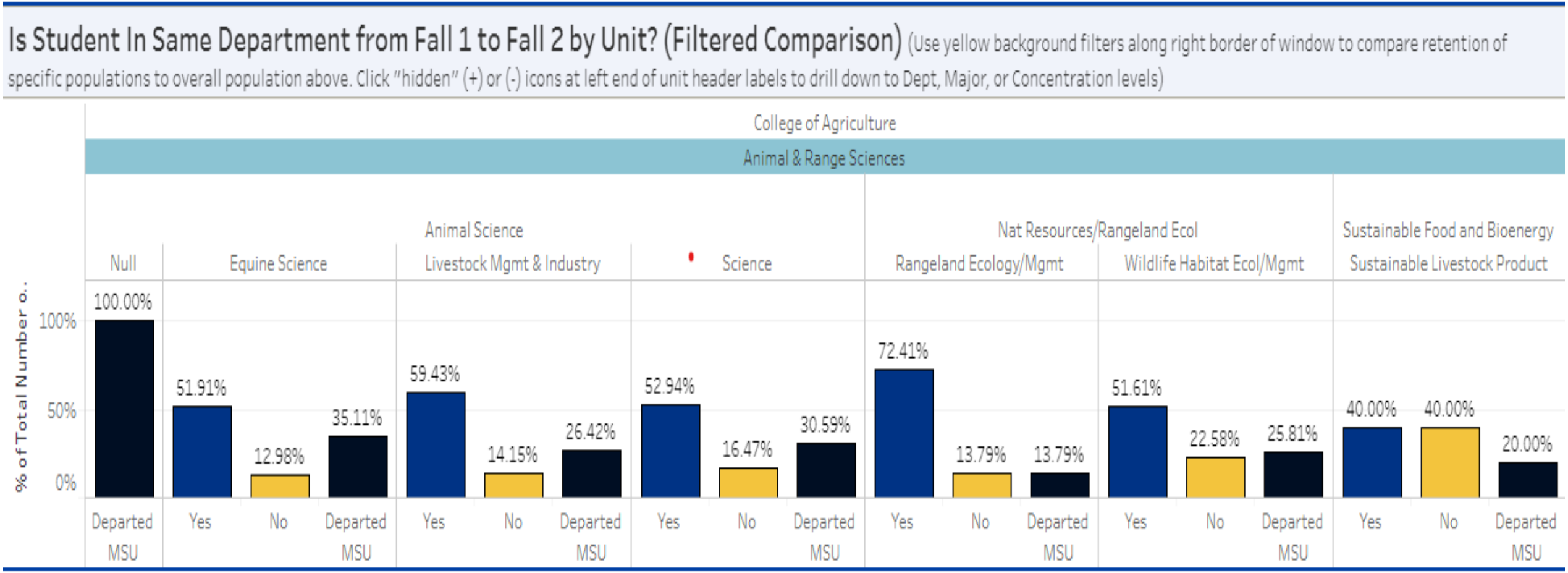
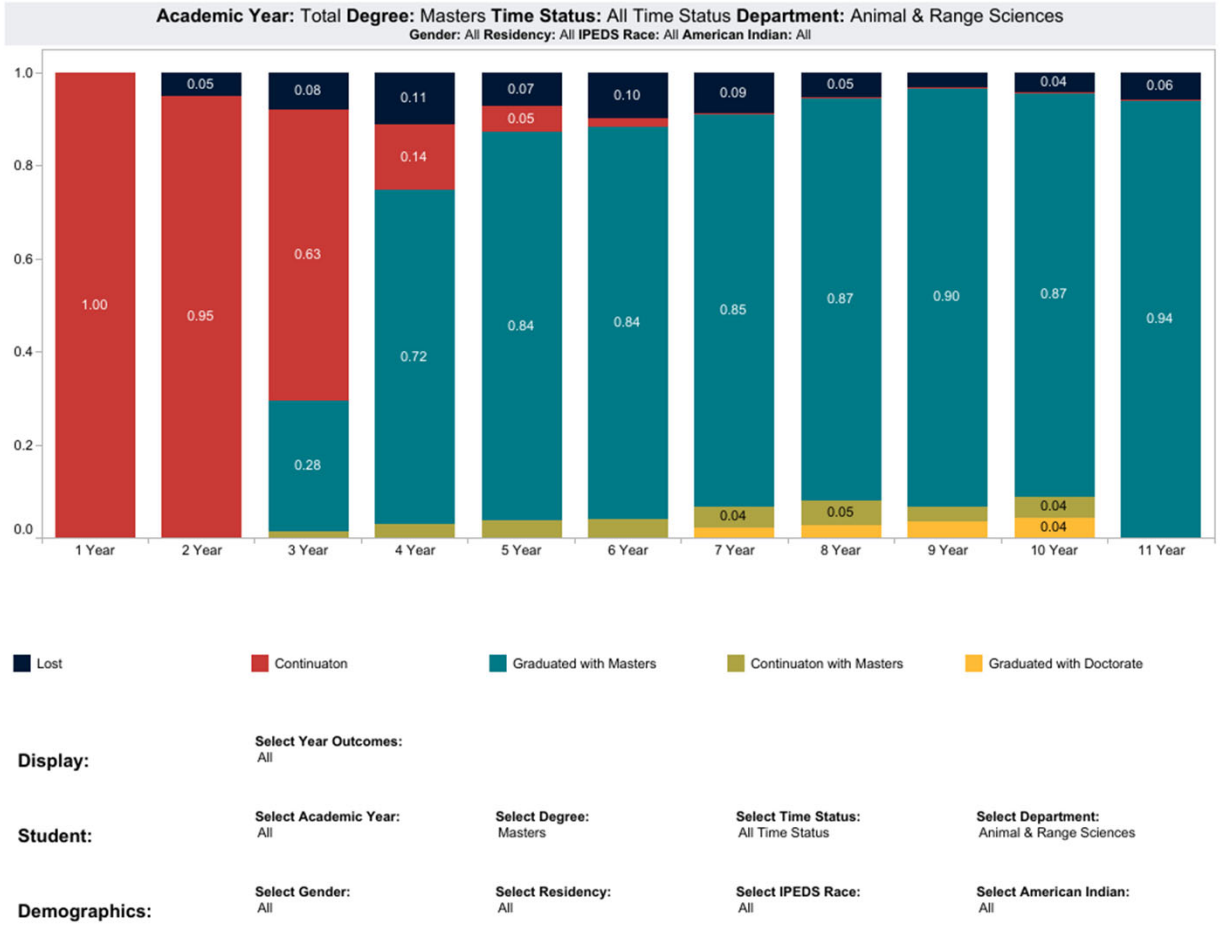
Enrollment, Retention, and Graduation 14. Retention by option



Return to Appendix B Table of Content

Enrollment, Retention, and Graduation 15. MS Graduation and Retention

Data Definitions: Retention/Graduation Incoming Academic | Data Definitions: Demographics | Cohort Overview | Retention and Graduation Rates | **Outcomes by Year**



Display:
Select Year Outcomes: All

Student:
Select Academic Year: All
Select Degree: Masters
Select Time Status: All Time Status
Select Department: Animal & Range Sciences

Demographics:
Select Gender: All
Select Residency: All
Select IPEDS Race: All
Select American Indian: All

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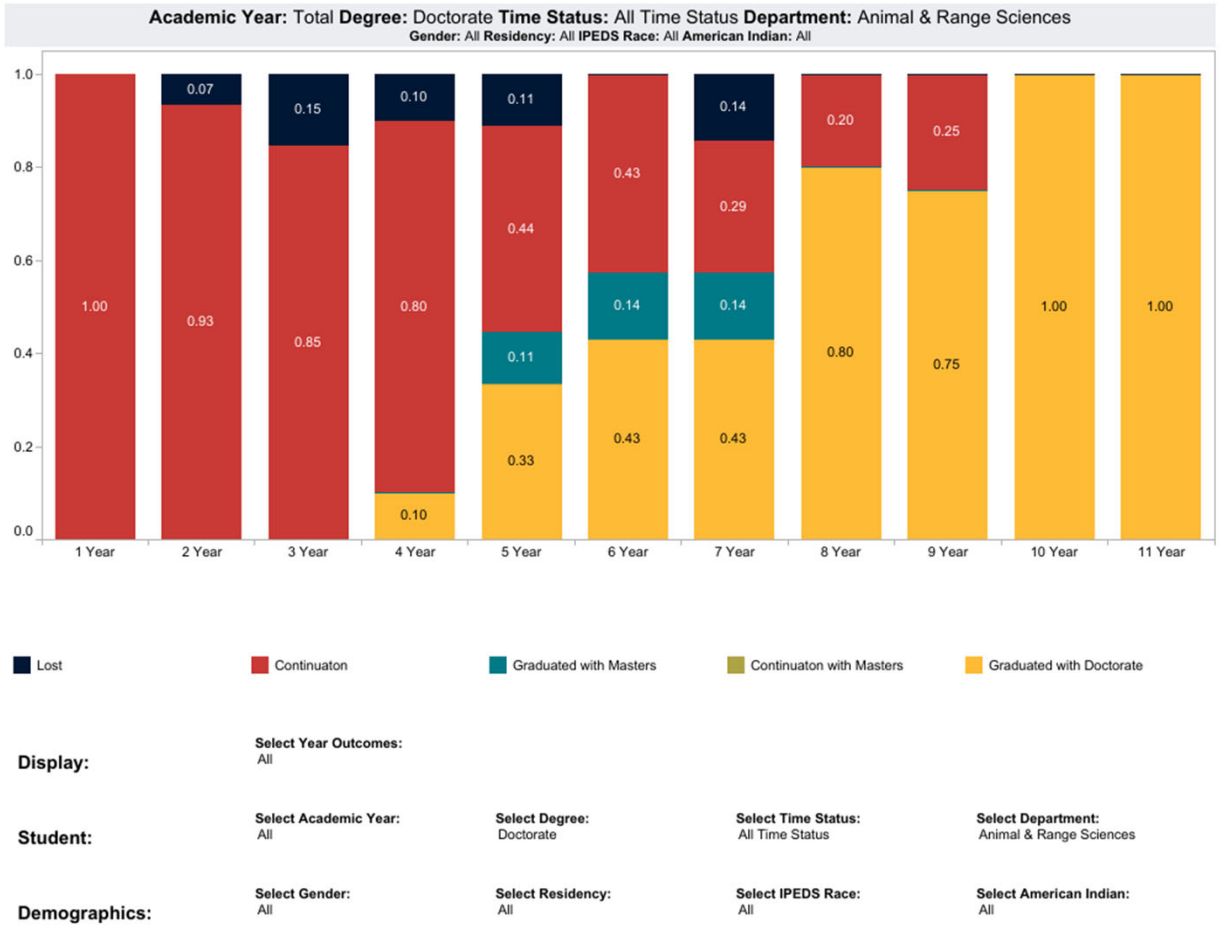
Enrollment, Retention, and Graduation 16. PhD Graduation and Retention

Data Definitions: Retention/Graduation Incoming Academic | Data Definitions: Demographics | Cohort Overview | Retention and Graduation Rates | **Outcomes by Year**



Display:
Select Year Outcomes: All

Student:
Select Academic Year: All
Select Degree: Doctorate
Select Time Status: All Time Status
Select Department: Animal & Range Sciences

Demographics:
Select Gender: All
Select Residency: All
Select IPEDS Race: All
Select American Indian: All

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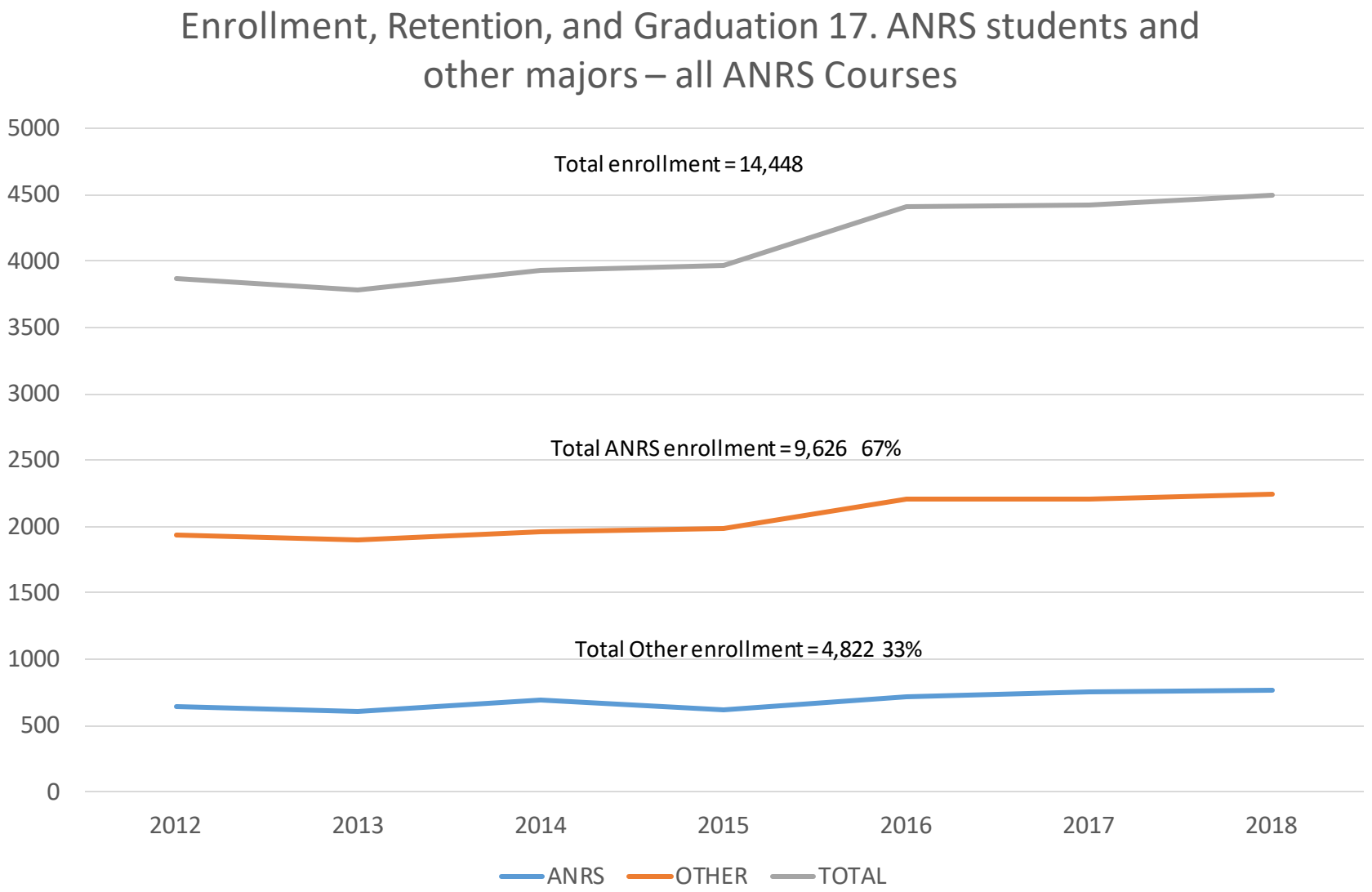

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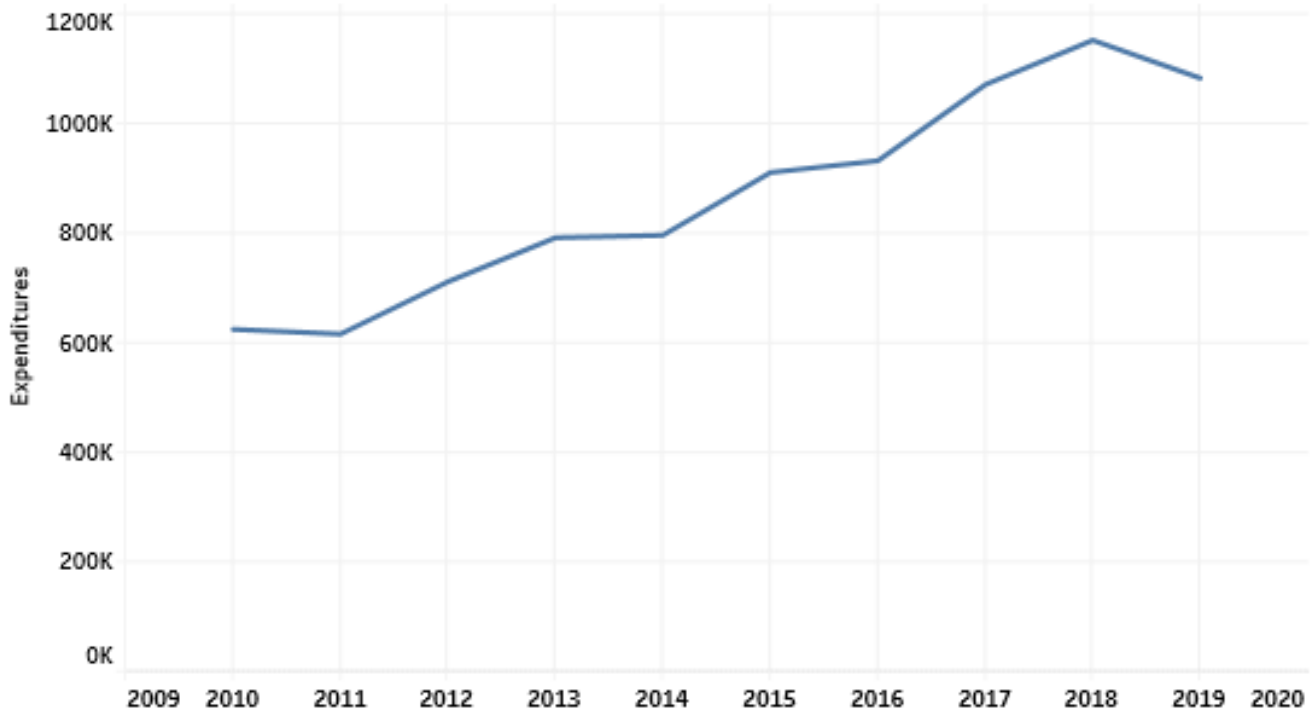
Teaching 1. Instructional Expenditures

Key Performance Indicators: Instructional Resources

Instructional Expenditures



College or Department?
- (●) University Total
- ( ) College Level
- ( ) Department Level

Fiscal Year
2010 to 2019
and Null values

College:
All

Department
Animal & Range Sciences

College

To Examine Expenditures by Department:

Scroll over the [+] button above "College" to see General Fund Expenditures for each department.

College	Department	2010	2011	2012	2013	2014	2015	2016	2017
Agriculture	Animal & Ra..	625,470	616,875	712,439	792,646	797,127	911,461	932,882	1,071
Grand Total		625,470	616,875	712,439	792,646	797,127	911,461	932,882	1,071

Department

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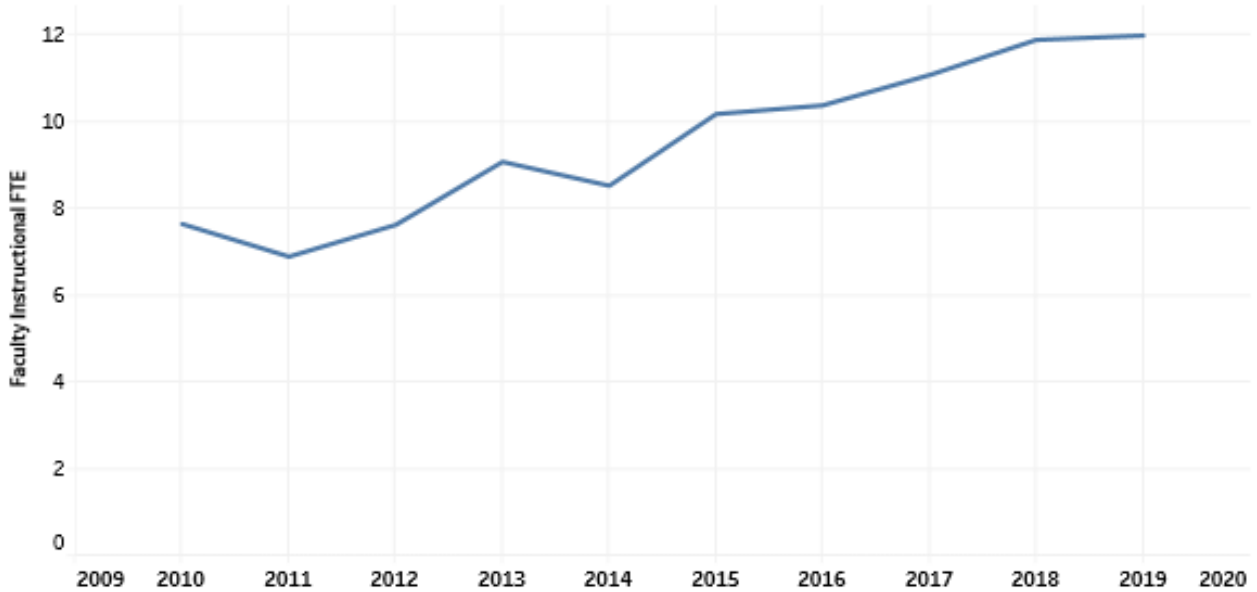
Teaching 2. Faculty Instructional FTE including both TT and NTT

Key Performance Indicators: Instructional Resources

Faculty Instructional FTE



College or Department?
- University Total
- College Level
- Department Level

Fiscal Year
2010 to 2019
and Null values

College
Agriculture

Department
Animal & Range Sciences

College

Instructional FTE by Department:
Scroll over the [+] button above "College" to see Faculty Instructional FTE for each department. Table values are arranged in the order given: **Total, Tenure-Track, Non Tenure-Track**. Scroll over each cell for more information in tooltip.

College	Department	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture	Animal & Range Sciences	7.648 4.931 2.717	6.898 5.481 1.417	7.630 5.480 2.150	9.080 6.880 2.200	8.532 6.266 2.266	10.182 6.566 3.616	10.382 6.716 3.666	11.082 7.016 4.066	11.891 7.208 4.683	11.990 6.790 5.200
Grand Total		7.648 4.931 2.717	6.898 5.481 1.417	7.630 5.480 2.150	9.080 6.880 2.200	8.532 6.266 2.266	10.182 6.566 3.616	10.382 6.716 3.666	11.082 7.016 4.066	11.891 7.208 4.683	11.990 6.790 5.200

Department

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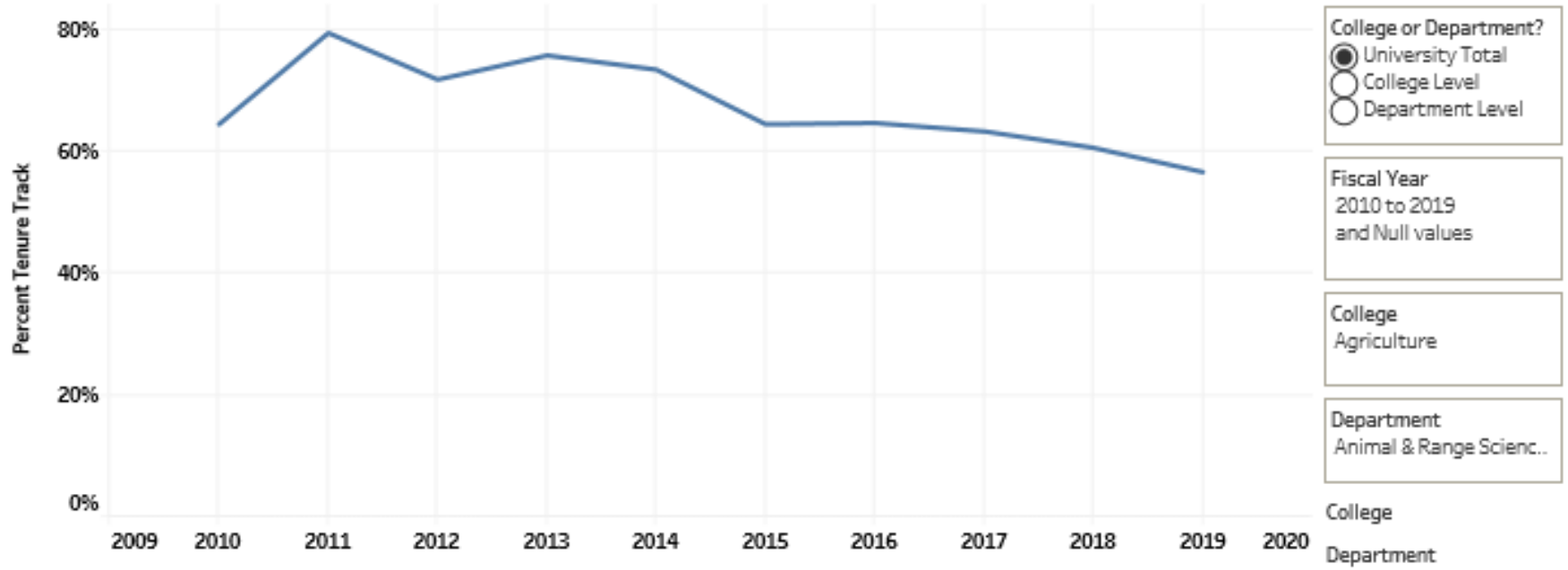
Teaching 3. Percent Tenure-Track by Year

Key Performance Indicators: Instructional Resources

Introduction	Instructional Expenditures by Fiscal Year	Faculty Instructional FTEs	**Percent Tenure-Track Faculty**	Graduate Teaching Assistant FTEs	Expenditures per Student FTEs

Percent Tenure-Track Over Time



To Examine Percent Tenure Track by Department
Scroll over the [+] button above "College" to see Percent Tenure Track for each department.

College	Department	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture	Animal & Range Scienc..	64%	79%	72%	76%	73%	64%	65%	63%	61%	57%

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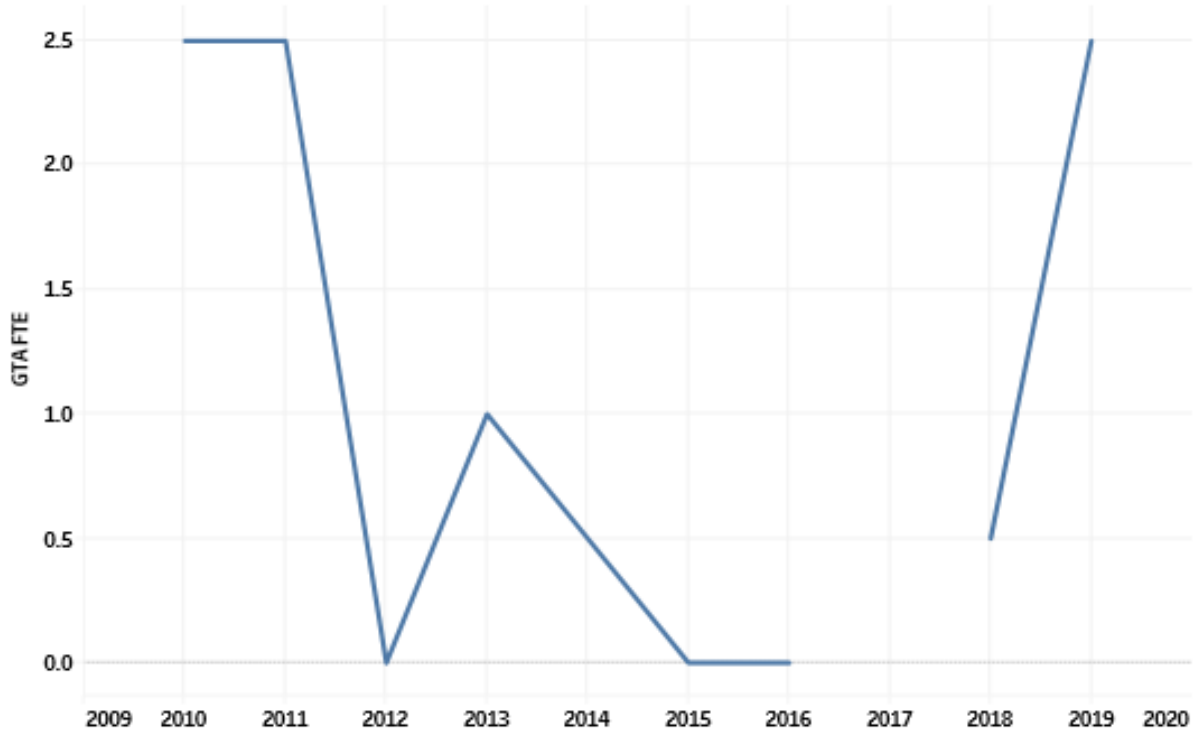
Teaching 4. GTA FTE

Key Performance Indicators: Instructional Resources

GTA FTE



College or Department?
- (●) University Total
- ( ) College Level
- ( ) Department Level

Fiscal Year
2010 to 2019
and Null values

College
Agriculture

Department
Animal & Range Sciences

College

Department

To Examine GTA FTEs by Department:
Scroll over the [+] button above "College" to see GTA FTEs for each department.

College	Department	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture	Animal & Ra..	2.500	2.500	0.000	1.000	0.500	0.000	0.000		0.500	2.500
Grand Total		2.500	2.500	0.000	1.000	0.500	0.000	0.000		0.500	2.500

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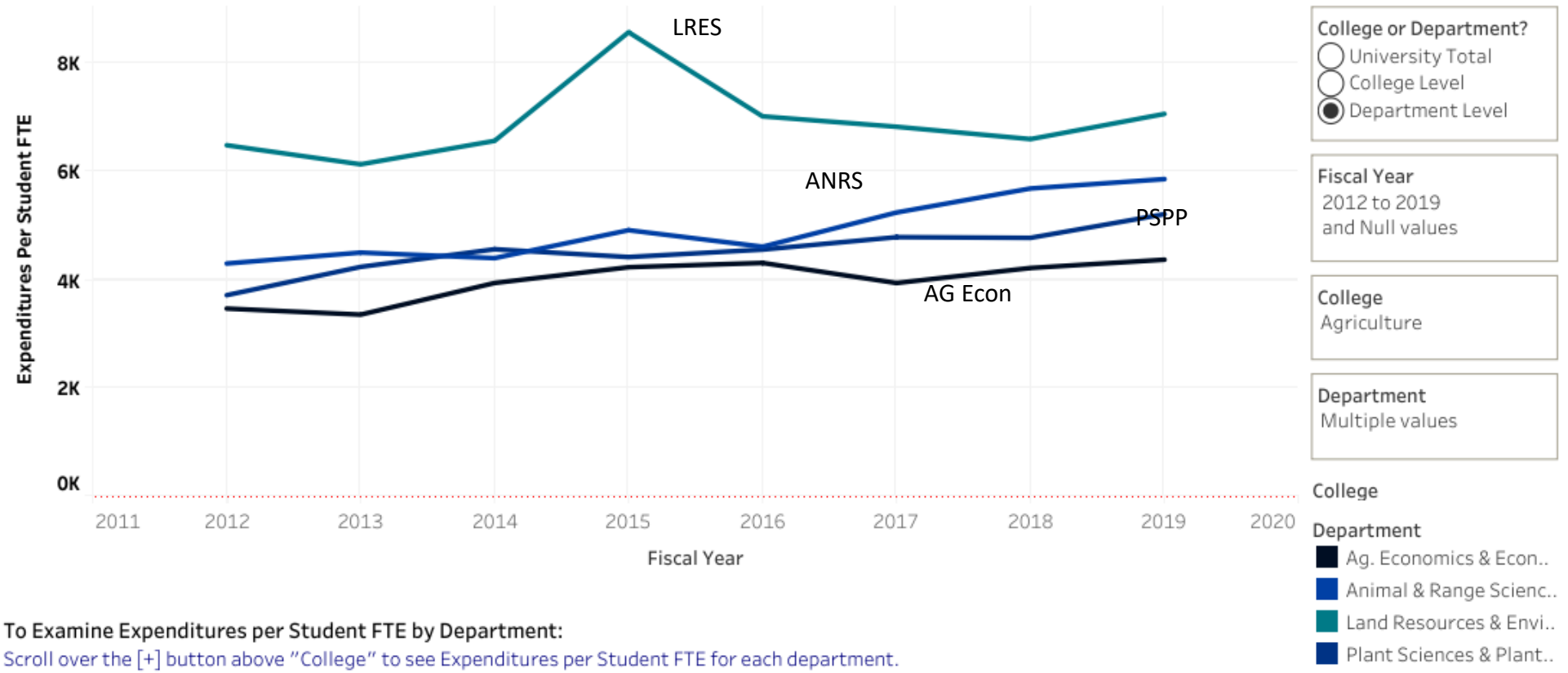
Teaching 5. Expenditures per Student FTE, including other COA Departments

Key Performance Indicators: Instructional Resources

Introduction	Instructional Expenditures by Fiscal Year	Faculty Instructional FTEs	Percent Tenure-Track Faculty	Graduate Teaching Assistant FTEs	**Expenditures per Student FTEs**

Expenditures per Student FTE



To Examine Expenditures per Student FTE by Department:
Scroll over the [+] button above "College" to see Expenditures per Student FTE for each department.

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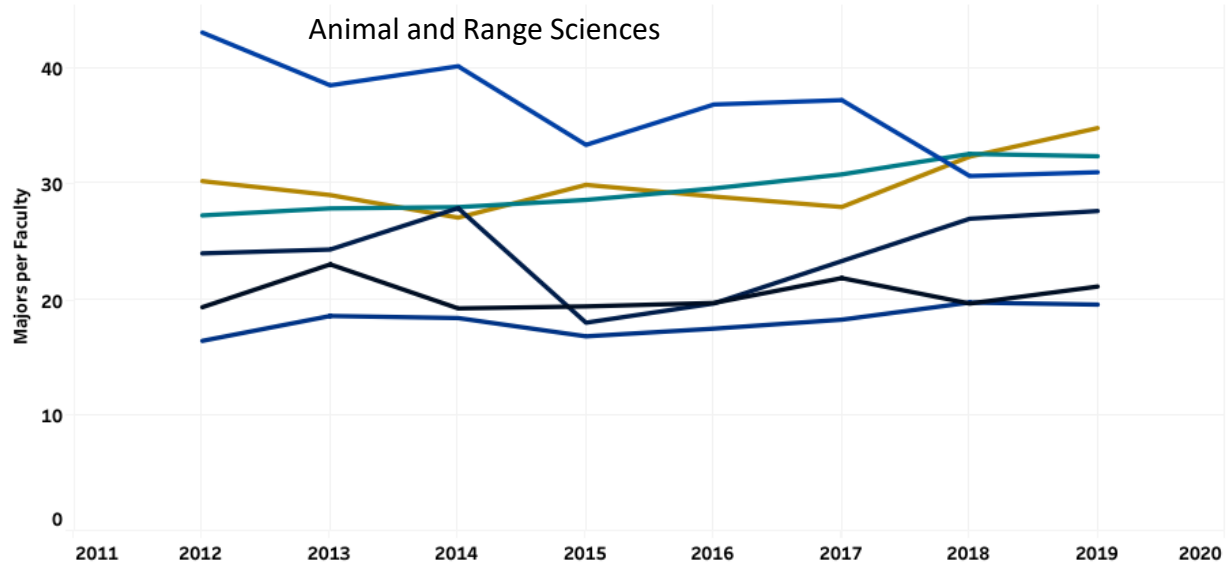
Teaching 6. Majors per Faculty FTE Including other COA Departments

Key Performance Indicators: Majors and Enrollment

Total Underg raduate Maj ors | Freshman/ Sophomore Majors | Junior/Senior/Post-Baccalaureate Majors | Graduate Majors | Second Majors | Second Degree Majors | **Majors Per Faculty**

Majors Per Faculty FTE



College or Department?
- University Total
- College Level
- Department Level

Fiscal Year
2012 to 2020
and Null values

College
Agriculture

Department
Multiple values

College

To Examine Majors per Faculty FTE by Department:
Examine Departmental totals by either filtering by the specific departments you wish to see or clicking the [+] button on the "College" header.

College	2012	2013	2014	2015	2016	2017	2018	2019	2020
Agriculture	27.039	27.643	26.291	25.814	26.380	27.039	27.574	28.685	
Grand Total	27.039	27.643	26.291	25.814	26.380	27.039	27.574	28.685	

Department
- Ag. Economics & Econ..
- Ag. Education
- Animal & Range Scienc..
- Land Resources & Envi..
- Microbiology, Immuno..

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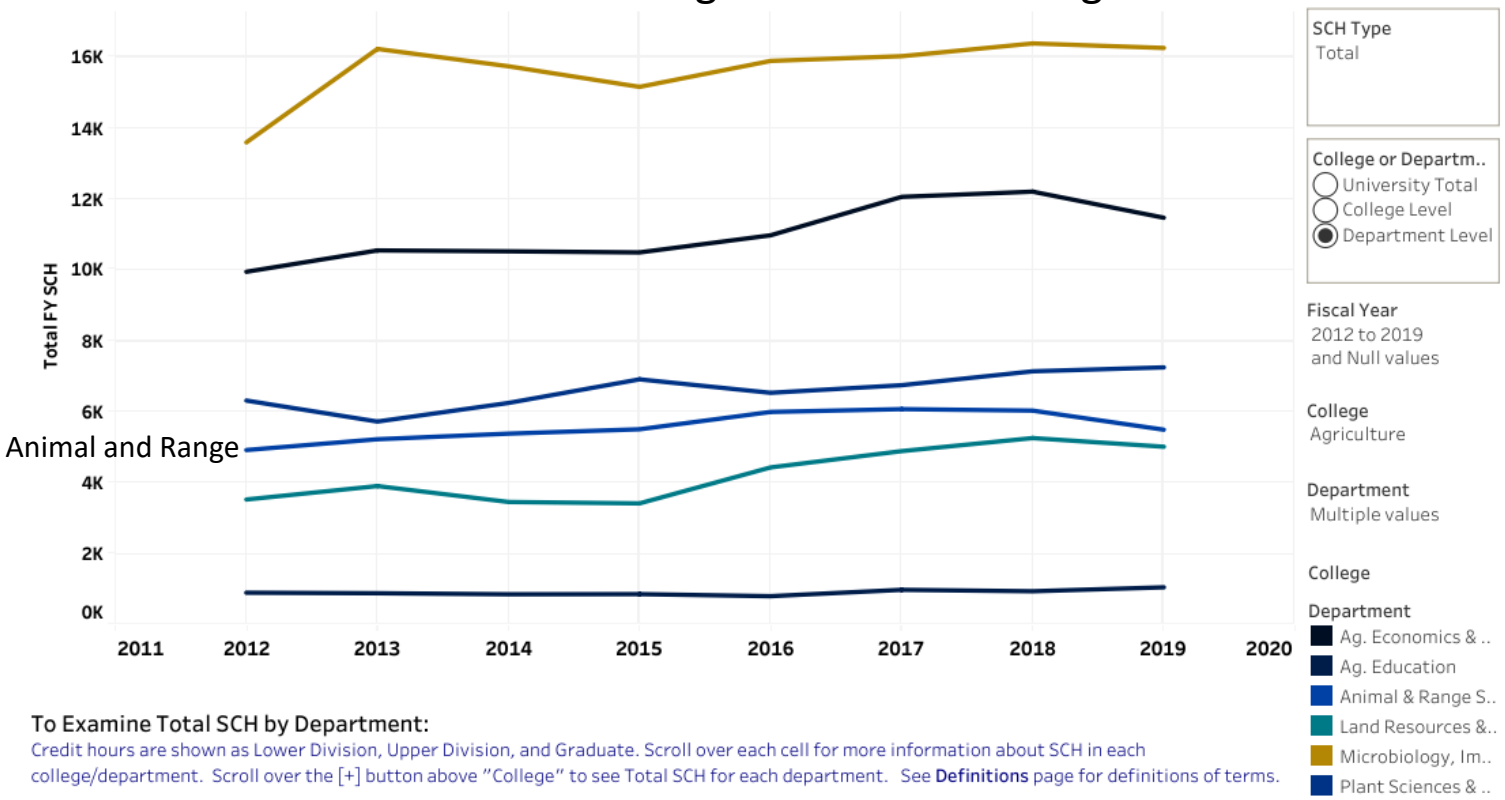
Teaching 7. All Students Graduate and Undergraduate SCH

Key Performance Indicators: Student Credit Hours

Definitions | **Student Credit Hours by Level** | SCH per Faculty FTE | Online Credit Hours | Total Student FTE | Undergraduate FTE | Graduate FTE

Student Credit Hours

All students – graduate and undergraduate



Animal and Range

To Examine Total SCH by Department:

Credit hours are shown as Lower Division, Upper Division, and Graduate. Scroll over each cell for more information about SCH in each college/department. Scroll over the [+] button above "College" to see Total SCH for each department. See **Definitions** page for definitions of terms.

College	2012	2013	2014	2015	2016	2017	2018	2019
	22,352	24,258	23,728	24,457	25,439	27,255	27,893	26,455
Agriculture	14,493	15,659	16,092	15,078	15,865	16,351	16,921	17,103
	2,405.0	2,650.0	2,437.0	2,863.0	3,375.0	3,226.5	3,202.0	3,034.0

Return to Appendix B Table of Content

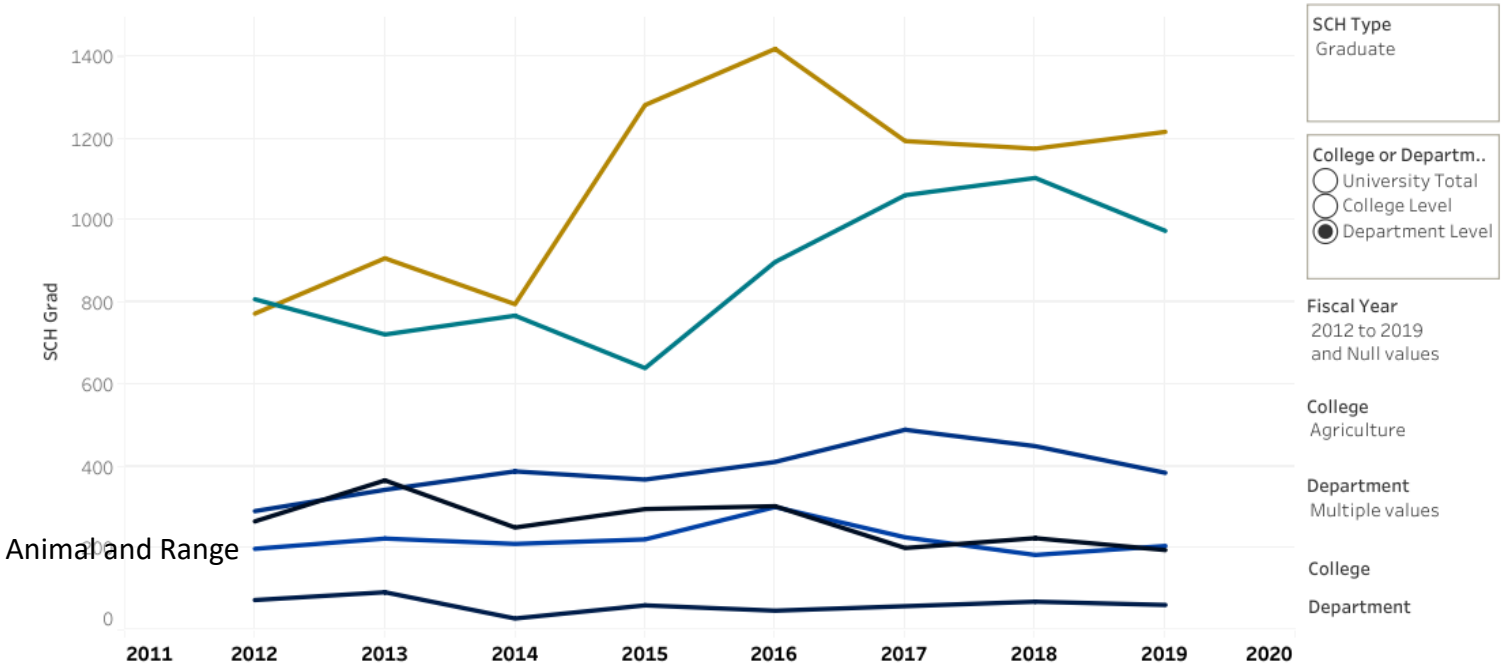
Teaching 8. Graduate SCH

Key Performance Indicators: Student Credit Hours

Definitions | **Student Credit Hours by Level** | SCH per Faculty FTE | Online Credit Hours | Total Student FTE | Undergraduate FTE | Graduate FTE

Student Credit Hours

Graduate Students



Animal and Range

To Examine Total SCH by Department:

Credit hours are shown as Lower Division, Upper Division, and Graduate. Scroll over each cell for more information about SCH in each college/department. Scroll over the [+] button above "College" to see Total SCH for each department. See **Definitions** page for definitions of terms.

College	2012	2013	2014	2015	2016	2017	2018	2019
	22,352	24,258	23,728	24,457	25,439	27,255	27,893	26,455
Agriculture	14,493	15,659	16,092	15,078	15,865	16,351	16,921	17,103
	2,405.0	2,650.0	2,437.0	2,863.0	3,375.0	3,226.5	3,202.0	3,034.0

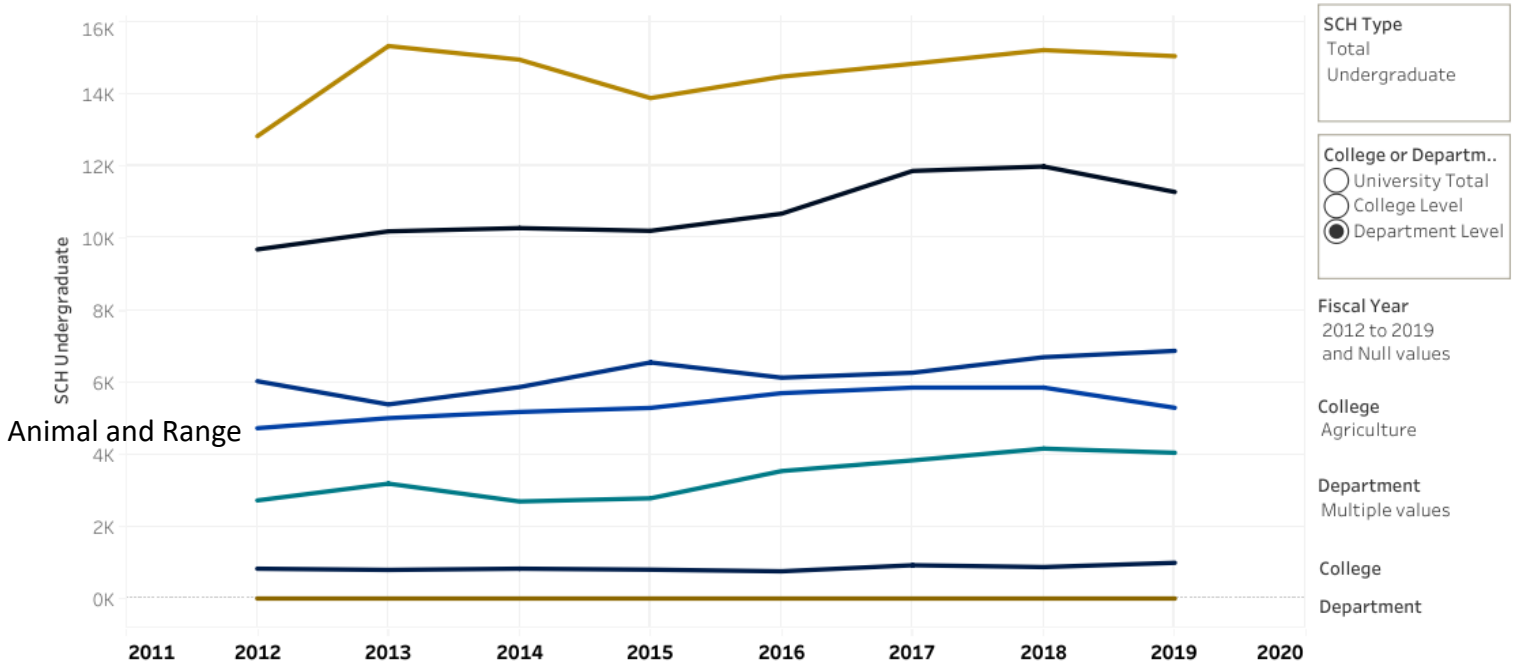
Return to Appendix B Table of Content

Teaching 9. Under Graduate SCH

Key Performance Indicators: Student Credit Hours

Definitions | **Student Credit Hours by Level** | SCH per Faculty FTE | Online Credit Hours | Total Student FTE | Undergraduate FTE | Graduate FTE

Student Credit Hours Under Graduate students



Animal and Range

To Examine Total SCH by Department:

Credit hours are shown as Lower Division, Upper Division, and Graduate. Scroll over each cell for more information about SCH in each college/department. Scroll over the [+] button above "College" to see Total SCH for each department. See **Definitions** page for definitions of terms.

College	2012	2013	2014	2015	2016	2017	2018	2019
	22,352	24,258	23,728	24,457	25,439	27,255	27,893	26,455
Agriculture	14,493	15,659	16,092	15,078	15,865	16,351	16,921	17,103
	2,405.0	2,650.0	2,437.0	2,863.0	3,375.0	3,226.5	3,220.0	3,079.0

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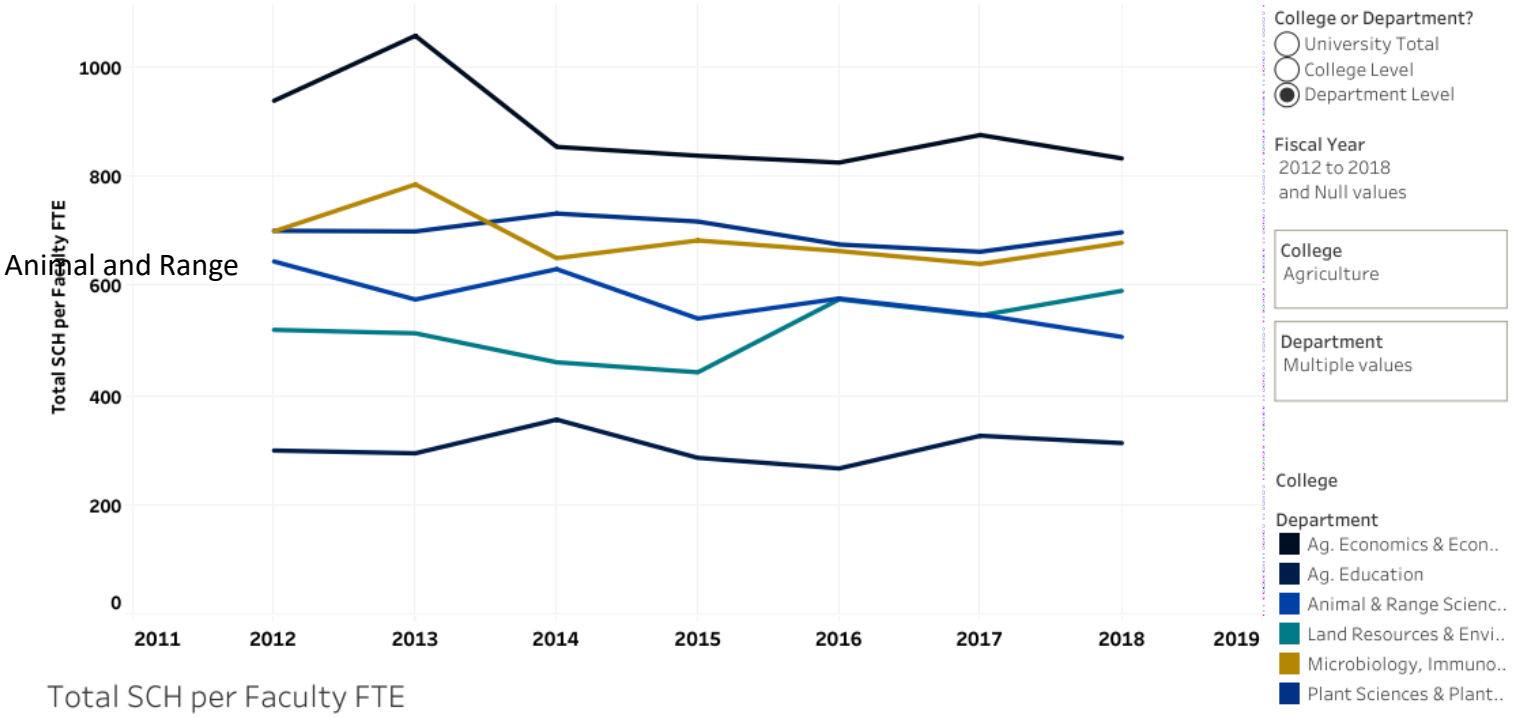
Teaching 10. SCH per Faculty FTE

Key Performance Indicators: Student Credit Hours

Definitions | Student Credit Hours by Level | **SCH per Faculty FTE** | Online Credit Hours | Total Student FTE | Undergraduate FTE | Graduate FTE

Student Credit Hours Per Faculty FTE



Animal and Range

Total SCH per Faculty FTE

To Examine SCH per Faculty FTE by Department:

Scroll over the [+] button above "College" to see SCH per Faculty FTE for each department. See **Definitions** page for definitions of terms.

College	2012	2013	2014	2015	2016	2017	2018
Agriculture	695.43	727.69	665.90	649.93	657.34	650.38	659.68
Grand Total	695.43	727.69	665.90	649.93	657.34	650.38	659.68

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Teaching 11. Average DFW for Animal Science Courses 2012 to Fall 2019

Course Title	average # of students	average % DFW	average by grade level	average by rubric
ANSC 100 Introduction to Animal Science.	129.2	15.1%	15.10%	
ANSC 202. Livestock Feeding.	28.5	6.3%		
ANSC 205. Intro to Meat Evaluation.	9.0	7.6%		
ANSC 215. Calving Management.	17.3	2.8%		
ANSC 222. Livestock in Sustain Systems.	116.4	13.1%		
ANSC 232. Livestock Management - Sheep I.	23.3	1.7%		
ANSC 234. Livestock Management - Beef I.	28.9	3.3%	5.8%	
ANSC 305. Advanced Meat Evaluation.	20.0	0.0%		
ANSC 308. Livestock Evaluation.	14.7	0.9%		
ANSC 316. Meat Science.	30.3	2.8%		
ANSC 320. Animal Nutrition.	59.9	3.1%		
ANSC 321. Physiology of Animal Reproduction.	64.4	1.7%		
ANSC 322. Principles of Animal Breeding and Genetics.	61.1	3.4%		
ANSC 337. Disease of Domestic Livestock.	55.0	3.2%	2.2%	
ANSC 408. Advanced Livestock Evaluation.	2.3	1.9%		
ANSC 410. Veterinary Entomology and Parasitology.	34.8	2.0%		
ANSC 416R. Meat Processing.	8.9	1.9%		
ANSC 418. Topics in Beef Nutrition.	15.0	9.7%		
ANSC 421. Assisted Reproduction Technologies w/ Lab.	28.9	0.5%		
ANSC 432R. Sheep Management.	20.0	4.1%		
ANSC 434R. Beef Cattle Management.	32.9	1.3%		
ANSC 436. Professional Development in Beef Production Systems.	12.8	0.0%		
ANSC 437. Professional Development in Beef Feedlot Systems.	11.5	0.0%		
BIOM Host-Assocated Micrbobiomes	18.7	3.5%	2.5%	3.7%

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Teaching 12. Average DFW for Equine Science and Equestrian Courses 2012 to fall 2019

Course Title	average # of students	average % DFW	average by grade level	average by rubric
EQUH 110. Western Equitation.	31.7	12.2%		
EQUH 114. Beginning English Equitation.	14.4	9.6%		
EQUH 133. Horses: Ground Level.	14.0	5.9%	9.2%	
EQUH 207. Intermed English Equitation.	10.3	6.7%		
EQUH 210. Intermed Western Equitation.	18.5	7.8%		
EQUH 253. Starting Colts.	14.4	3.0%		
EQUH 256. Developing The Young Horse.	11.1	0.0%	4.4%	
EQUH 314. Equestrian Instruction Methods.	7.2	2.4%	2.40%	5.9%
EQUS 206. Equine Ethology: Understanding Horse Behavior.	30.3	6.7%		
EQUS 233. Horse Science and Mgt Lab.	12.3	4.0%		
EQUS 291. Special Topics. 1-4 Credits. (1-4 Lec; 12 cr max) On Demand	12.0	20.0%	10.2%	
EQUS 327. Equine Lameness.	21.7	11.3%		
EQUS 346. Equine Reproductive Management.	11.1	2.6%		
EQUS 347. Equine Form to Function.	16.6	2.9%	5.6%	
EQUS 423. Equine Nutrition.	16.6	2.6%		
EQUS 424. Equine Exercise Physiology.	9.0	5.5%		
EQUS 430. Horse Management.	33.8	1.1%	3.1%	6.3%

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Teaching 13. Average DFW for Natural Resources and Wildlife Habitat Courses 2012 to fall 2019

Course Title	average # of students	average % DFW	average by grade level	average by rubric
NRSM 101. Natural Resource Conservation.	228.7	21.6%		
NRSM 102. Montana Range Plants. (11 sections)	197.4	27.6%	24.6%	
NRSM 235. Range and Pasture Monitoring.	18.3	2.5%		
NRSM 236. Small Pasture Management.	22.3	5.4%		
NRSM 240. Natural Resource Ecology.	95.7	8.2%	5.4%	
NRSM 330. Fire Ecology and Mgmt.	29.4	5.6%		
AGSC 342. Forages	35.4	6.8%		
NRSM 350. Vegetation of Western Wildlands.	19.1	8.0%		
NRSM 351. Biomes of Western Wildlands.	19.8	3.1%		
NRSM 353. Grazing Ecology and Management.	31.5	9.5%	6.6%	
NRSM 453. Habitat Inventory and Analysis.	21.6	3.1%		
NRSM 455. Riparian Ecology & Management.	28.0	2.0%	2.5%	8.6%
WILD 325. Wildlife-Livestock Nutrition.	22.9	11.0%		
WILD 355. Wildlife and Livestock Habitat Restoration.	9.5	3.2%	7.1%	
WILD 420. Range & Wildlife Policy and Planning.	19.8	7.7%		
WILD 426. Wildlife Habitat Management.	18.3	2.8%		
WILD 438. Wildlife Habitat Ecology.	23.1	3.5%	4.7%	5.6%

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Teaching 14. Animal Science High Impact Teaching Practices

High Impact Practice	Courses	Activity
First-Year Seminars and Experiences		-The Department does not currently offer a first-year seminar
Common Intellectual Experiences	ANSC 222	-focus on system dynamics and systems thinking that encourages linking learning across courses and holistic thinking
Writing-Intensive Courses	ANSC 434 R ANSC 316 ANSC 322 ANSC 321	-term paper assignment -write a paper reflecting both sides of the issue acknowledging the opposing viewpoint - incorporates three extension report drafts over the semester- one is polished/revised for a term paper -Students write 4 critiques of scientific journal articles
Collaborative Assignments and Projects	ANSC 432 ANSC 434 R ANSC 316 ANSC 222 ANSC 321	-Collaborative project on sheep management -Collaborative learning through multiple group projects -Group projects resulting in mock debates over contentious topics related to consumer trends -group assignment to encourage communication about difficult societal issues that are polarized and political -Groups of students are given a case study to identify the problem, propose a solution and give an oral presentation on the case
Undergraduate Research	ANSC 490 R ANSC 416 R	-Individual research opportunities guided by faculty -Students develop new meat product and conduct research on consumer acceptance, marketing, etc.
Diversity/Global Learning	ANSC 432	-Learn about the global sheep industry and the impacts of worldwide production and marketing trends
ePortfolios		-Not currently addressed within the Department
Service Learning, Community-Based Learning	ANSC 434 R ANSC 222 EQUS 430 ANSC 337 ANSC 215 ANSC 232 ANSC 395	-All these courses bring in members of the livestock and industry community for learning opportunities - engage students in calving and lambing as a service learning opportunity -3-day field trip to livestock operations and related business enterprises in different geographical locations

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Internships	ANSC 398 EQUS 498	-All undergraduate Animal Science majors are required to do an internship prior to graduation. These are structured courses with class credits and learning objectives
Capstone Courses and Projects	Ex. ANSC 434 R	-The Department no longer offers a specific capstone course, however, comprehensive management plans and similar projects are required in several upper level management classes such as ANSC 434 Beef Management.

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Teaching 15. NRRE Hight Impact Teaching Practices

High Impact Practice	Courses	Activity
First-Year Seminars and Experiences		- ANRS does not currently offer a first-year seminar
Common Intellectual Experiences	ANSC 100 NRSM 101 NRSM 102 ANSC 222 NRSM 240	- All ANSC and NRRE students are required to take these foundational courses their freshmen and sophomore years.
Writing-Intensive Courses	NRSM 101 NRSM 236 NRSM 353 NRSM 453 NRSM 455 NRSM 490R WILD 325 WILD 420	- Students read eight different scientific articles and provide a summary of each paper in the form of a rhetorical precis - Students develop property score cards using information from lecture, score cards are "tested" during field trip to a horse property - Students have weekly short writing assignments and an end-of-year report - Students write a technical report. Concise writing is stressed. Students are required to rewrite first draft to regain writing points - Students review a long term riparian monitoring base, analyze data, and use these data to evaluate riparian form and function, then develop a final report that describes findings - Students aid rancher, state or federal land manager in developing ecological condition evaluation or habitat restoration. These student teams collect data using taxonomic and survey tools learned in other classes, analyze data and prepare oral, written and poster presentations - Students have weekly short writing assignments and an end-of-year report - Students write a position paper, conduct peer-reviews of writing assignments, and revise position papers as per peer-review
Collaborative Assignments and Projects	NRSM 102 NRSM 235 NRSM 350 NRSM 353 NRSM 453 NRSM 455 NRSM 490R WILD 325 WILD 420	- Collaborative place-based and student-led study sessions to develop learning strategies and plant ID knowledge - Collaborative field-lab exercises in vegetation monitoring - Collaborative place-based and student-led study opportunities to develop learning strategies and plant ID knowledge - Weekly worksheets by group collaboration and final reports by groups. - Collaborative lab and field-based exercises in habitat inventory and analysis - Teams review long term monitoring base - Strongly collaborative; students assign each other tasks to oversee collecting, analyzing, summarizing and presenting ecological data and outcomes - Weekly worksheets by group collaboration and final reports by groups. - Collaborative learning through a term group project

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Undergraduate Research	NRSM 490R NRSM 490R	- Individual research opportunities guided by faculty - Guided feedback from faculty with regular input and CRITIQUE by rancher/land manager/biologist in charge of project
Diversity/Global Learning	NRSM 330 NRSM 351	- Students learn about historic European and Native American views and use of fire on the landscape; Native American uses cover past 3,500 years - In a writing assignment, students compare and contrast ecological, social, and management histories of biomes (regions) that are similar to a biome in North America but are from another continent. (Note: not assigned every year)
ePortfolios		- Not currently addressed within the Department
Service Learning, Community-Based Learning	NRSM 236 NRSM 453 NRSM 490R WILD 420	- Students provide cooperating arena/stable owner with a sustainability review of their property - Natural resource agency personnel and consultants present their work-related experiences, and are available for interacting with students - State park, wildlife refuge, rancher receive a reviewed action plan for their operation - Natural resource administrators are brought into classroom for applied learning opportunities and student interaction
Internships	None.	- NRRE students are not required to complete an internship, however numerous opportunities are available for seasonal work related to the NRRE degree. Students are strongly encouraged to work seasonally to: gain experience, network, build their resume, etc.
Capstone Courses and Projects	NRSM 490R	- ANRS no longer requires a specific capstone course for NRRE majors however, in this field-based course taken by many NRRE majors, they have the opportunity to synthesize material from courses in ANRS, LRES and Ecology (wildlife) to solve a real world management challenge.
Field Lab and Experiential Learning	NRSM 102 NRSM 235 NRSM 236 NRSM 240 NRSM 330 NRSM 353 NRSM 453 NRSM 455 WILD 325 WILD 355	Montana Range Plants (220)* Range and Pasture Monitoring (18) Small Pasture Management (11) Natural Resources Ecology (90) Fire Ecology and Management (34) Grazing Ecology and Management (32) Habitat Inventory and Analysis (20) Riparian Ecology and Management (24) Wildlife-Livestock Nutrition (24) Wildlife-Livestock Habitat Restoration (26) *(xx) Fall 19 or Spring 20 enrollment

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Teaching 16. Range Program in the U.S.

Range Education Institution	Number of Undergrads in Program	Number of Undergrads that would meet RS-454 Standards	Accredited by SRM
BRIGHAM YOUNG UNIVERSITY	130	110	N
CHADRON STATE COLLEGE	135	135	N
COLORADO STATE UNIVERSITY	x	x	Y
HUMBOLDT STATE UNIVERSITY	39	25	N
KANSAS STATE UNIVERSITY	4	4	N
MONTANA STATE UNIVERSITY	74	74	Y
NEW MEXICO STATE UNIVERSITY	x	x	Y
NORTH DAKOTA STATE UNIVERSITY	12	12	N
OKLAHOMA STATE UNIVERSITY	x	x	N
OREGON STATE UNIVERSITY - Corvallis	16	16	Y
OSU Ag & Nat. Res. @ Eastern Oregon University	26	40	Y
SOUTH DAKOTA STATE UNIVERSITY	x	x	Y
SOUTHERN UTAH UNIVERSITY	14	14	N
TEXAS A&M UNIVERSITY	78	31	Y
TEXAS TECH UNIVERSITY	327	54	N
UNIVERSITY OF ARIZONA	31	29	Y
UNIVERSITY OF IDAHO	28	28	Y
UNIVERSITY OF NEBRASKA - LINCOLN	x	x	N
UNIVERSITY OF NEVADA - RENO	20	20	N
UNIVERSITY OF WYOMING	91	80	Y
UTAH STATE UNIVERSITY	40	40	Y

x - these prograam have range courses and students but apparently their representative have not provided numbers yet.

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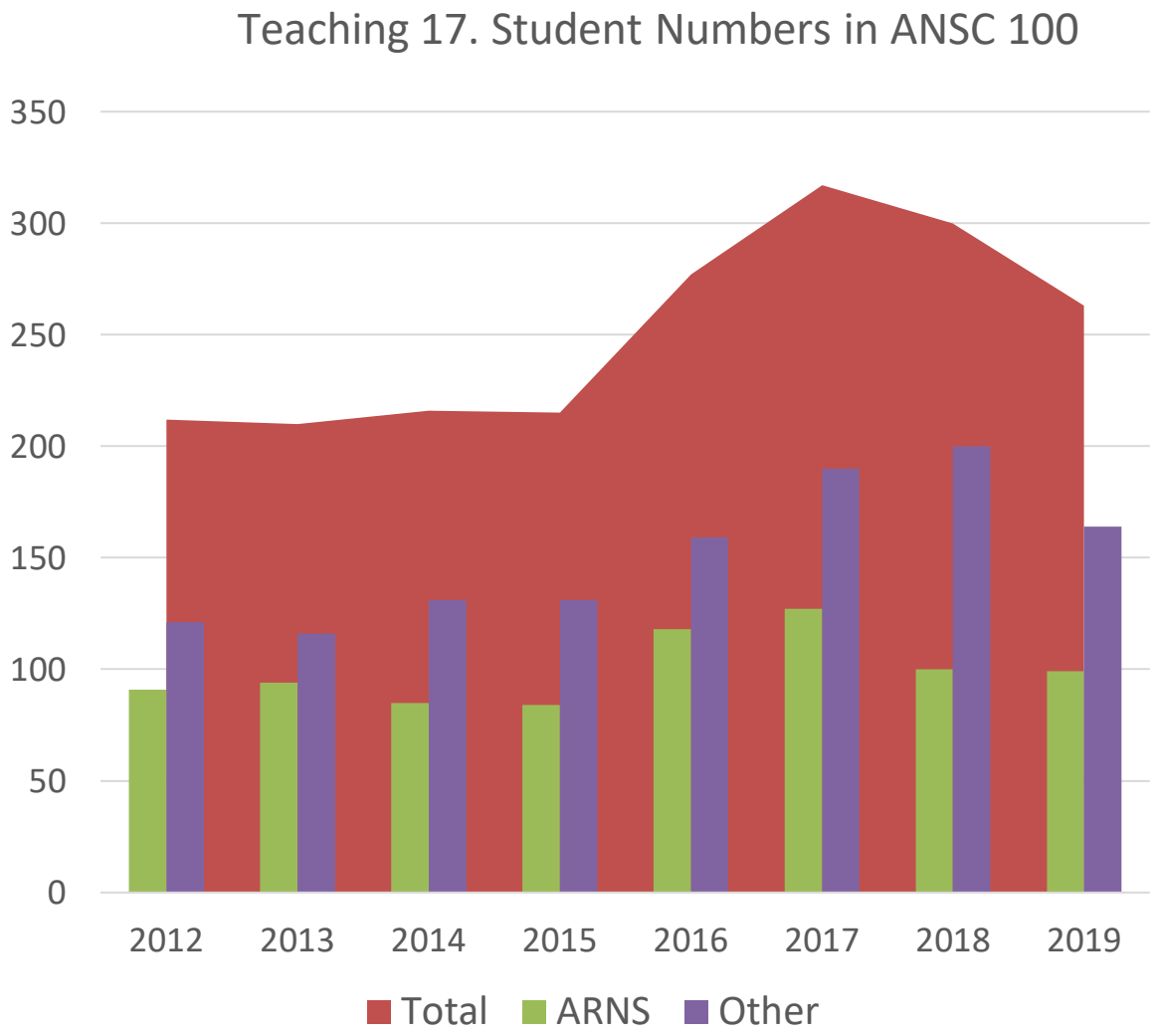

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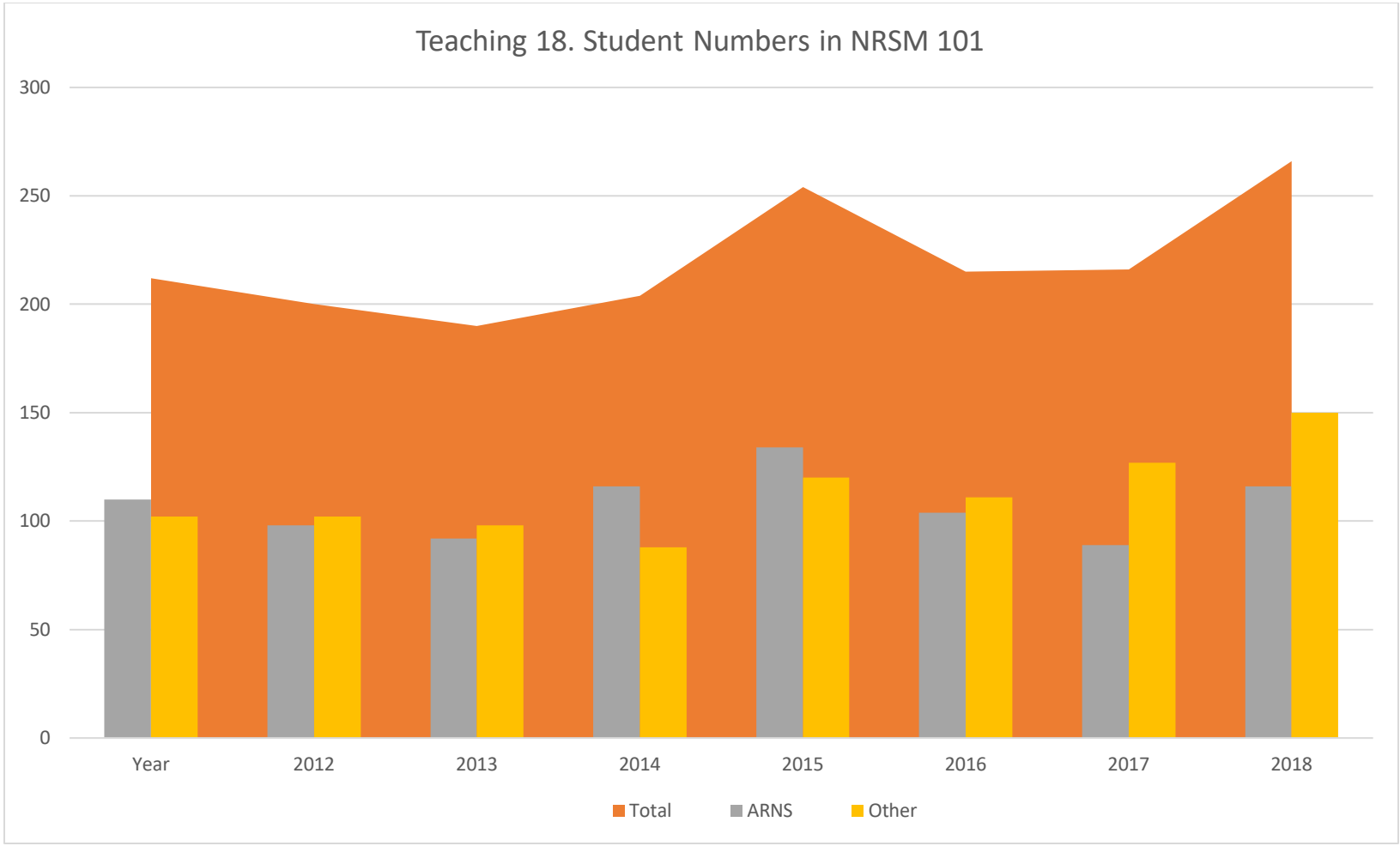

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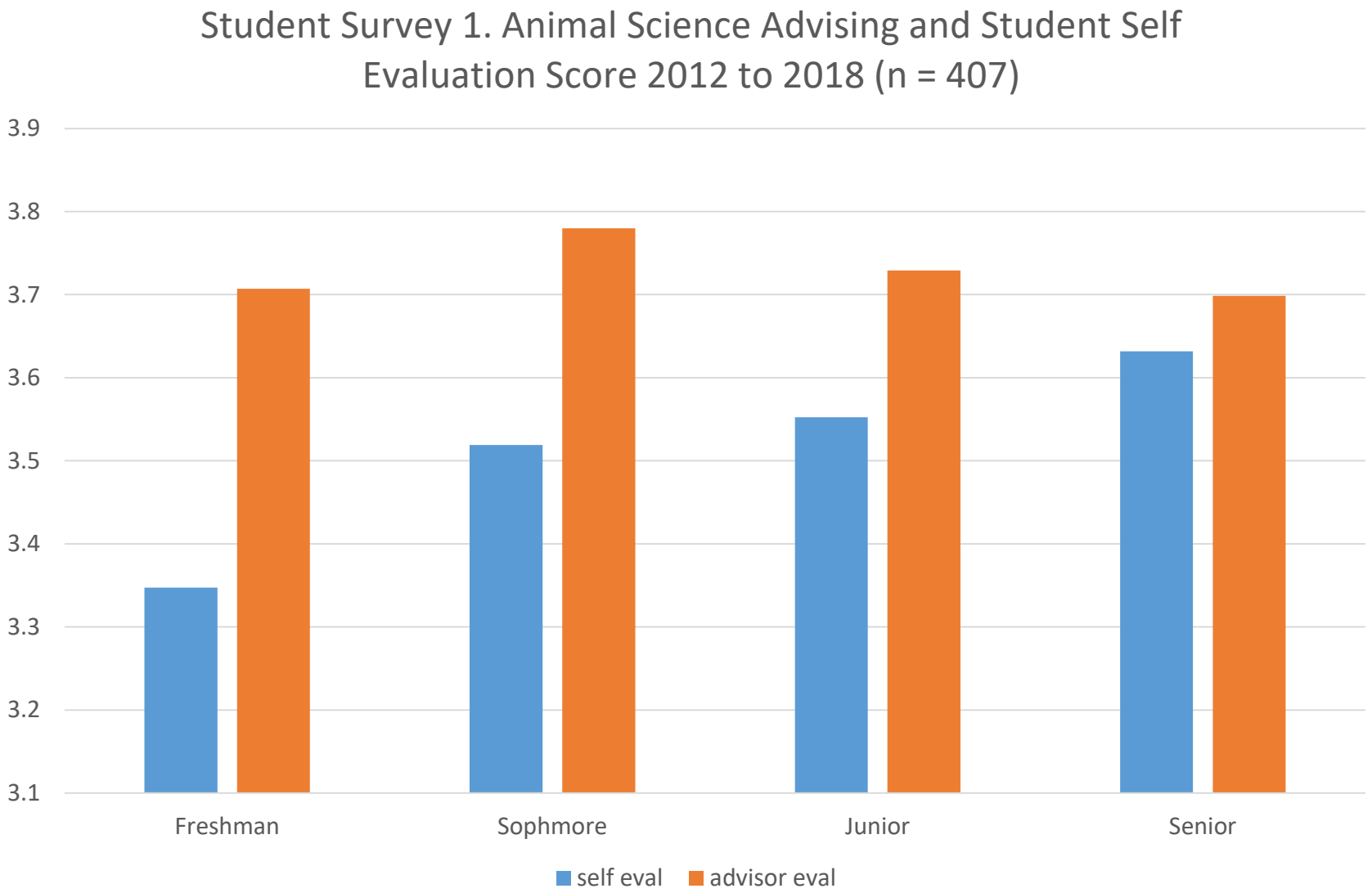

Scoring 1 to 4 with 4 being the highest, most positive score

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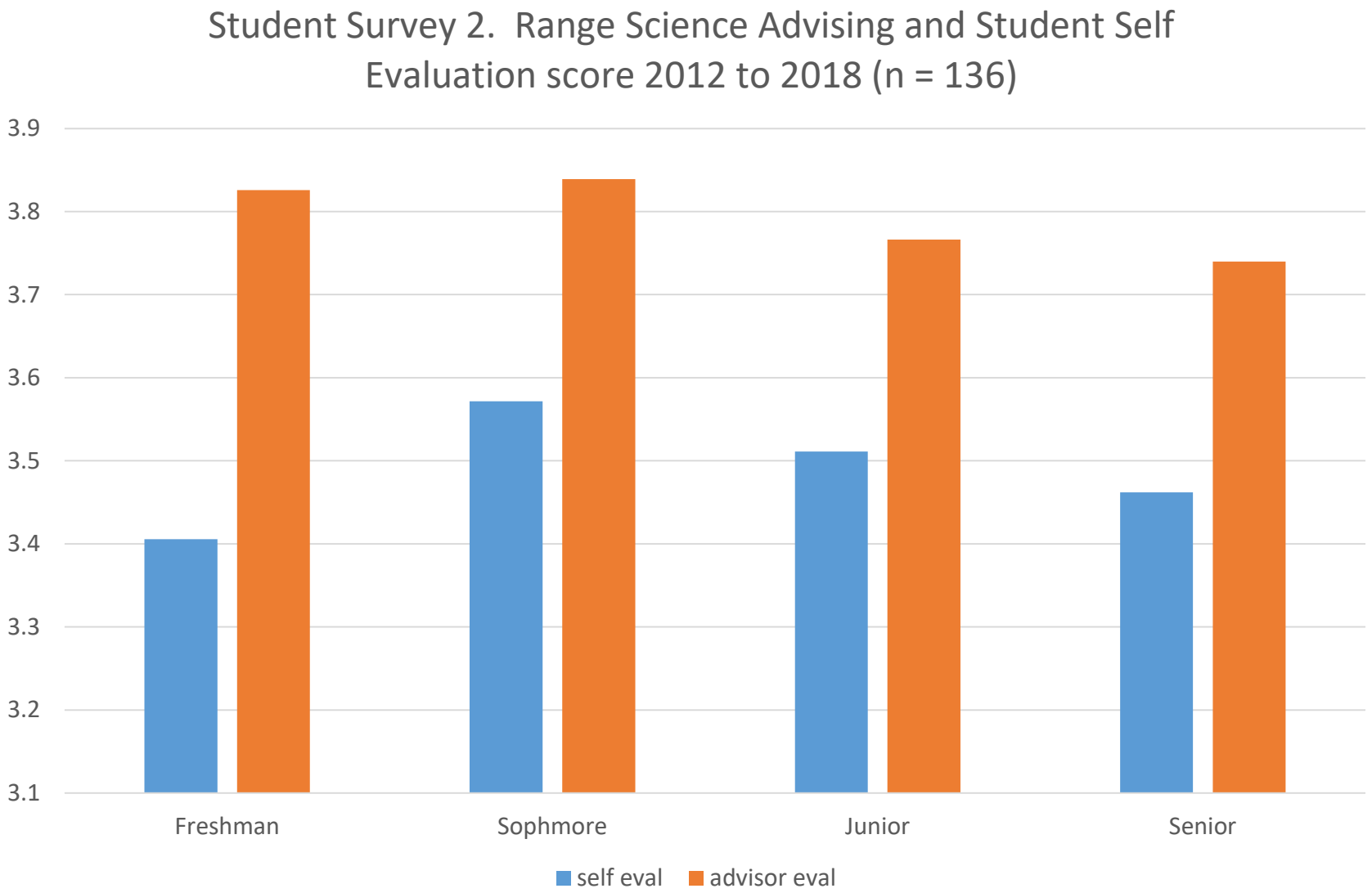

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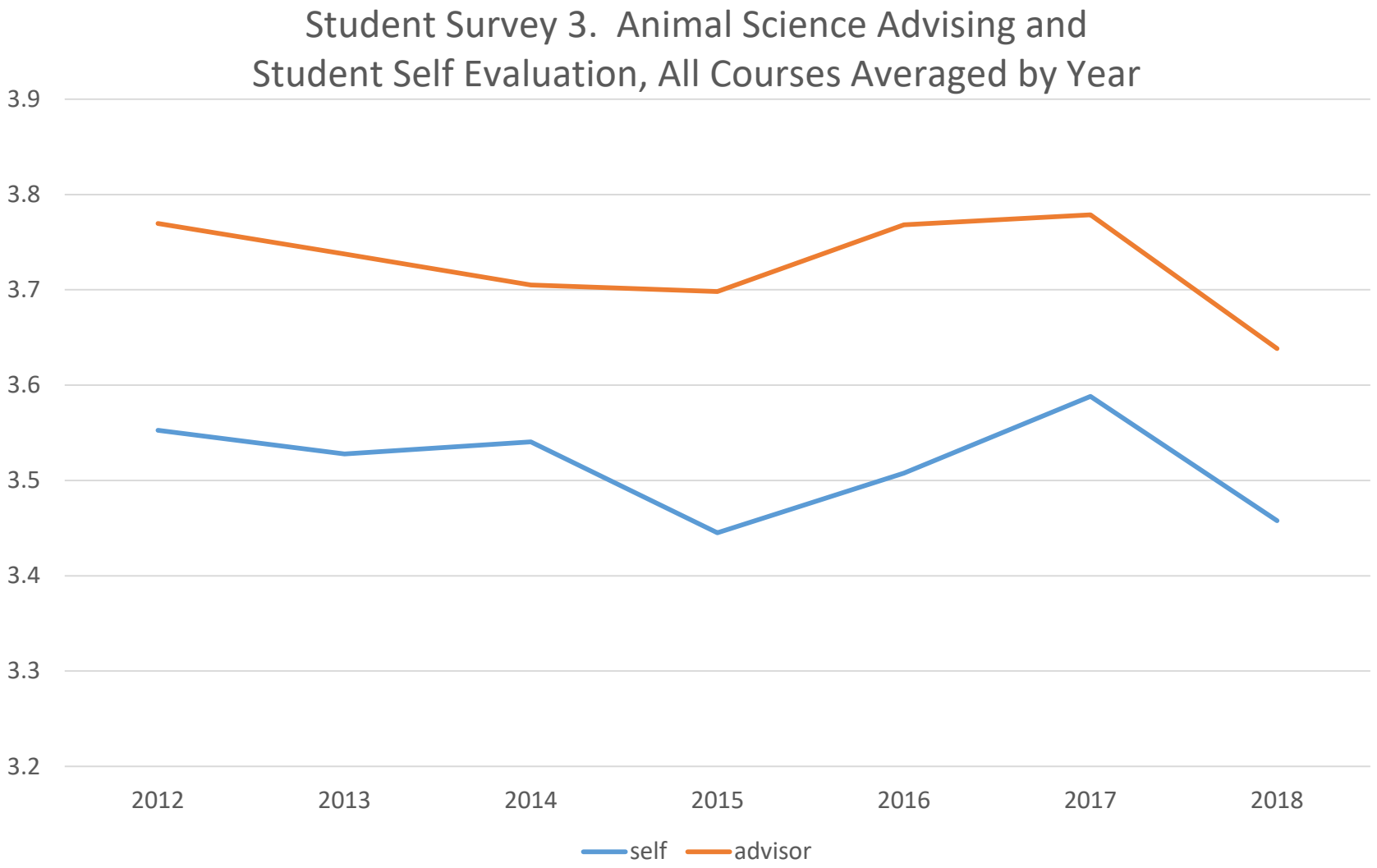
Scoring 1 to 4 with 4 being the highest, most positive score



Scoring 1 to 4 with 4 being the highest, most positive score

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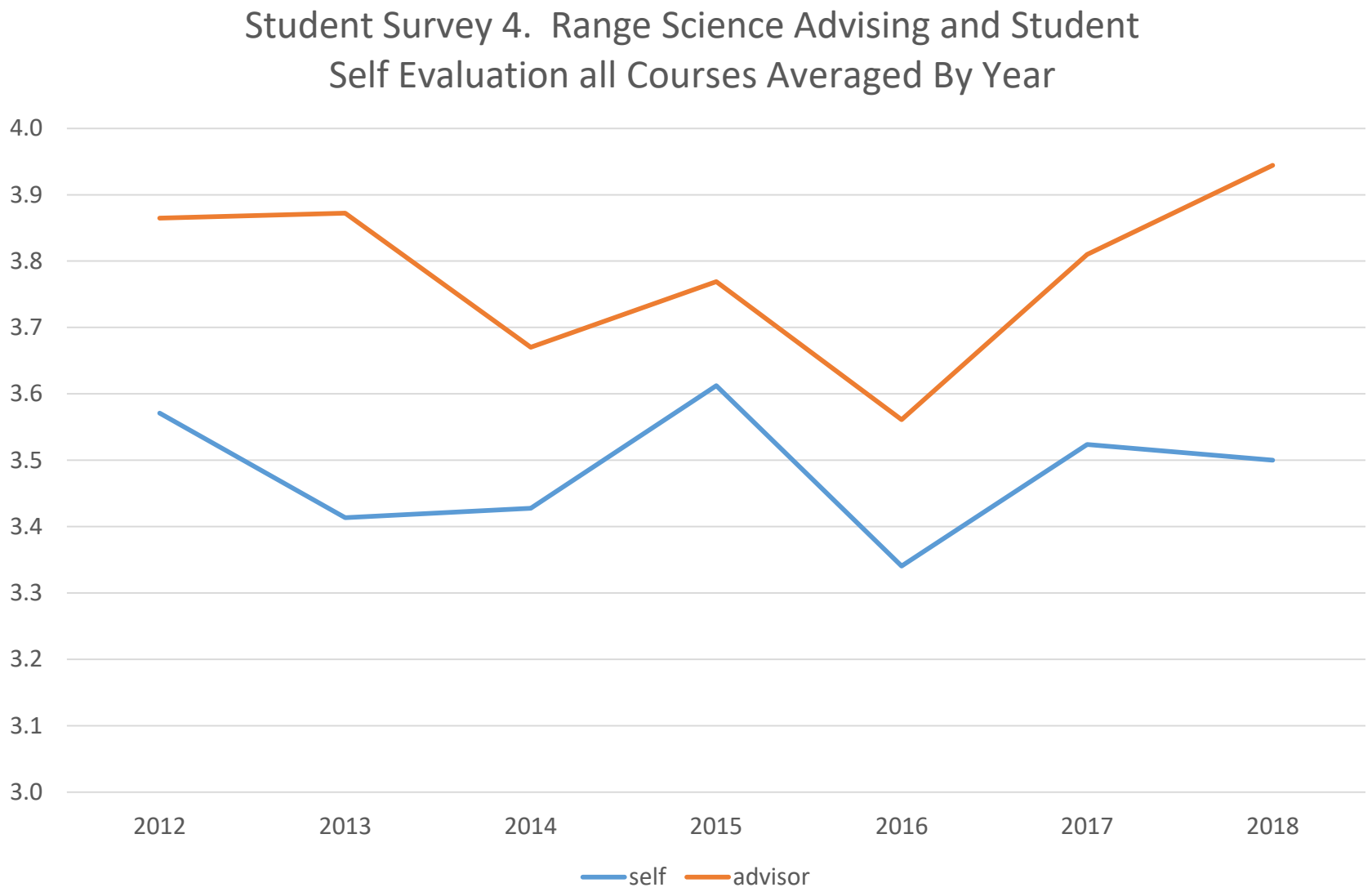

Scoring 1 to 4 with 4 being the highest, most positive score

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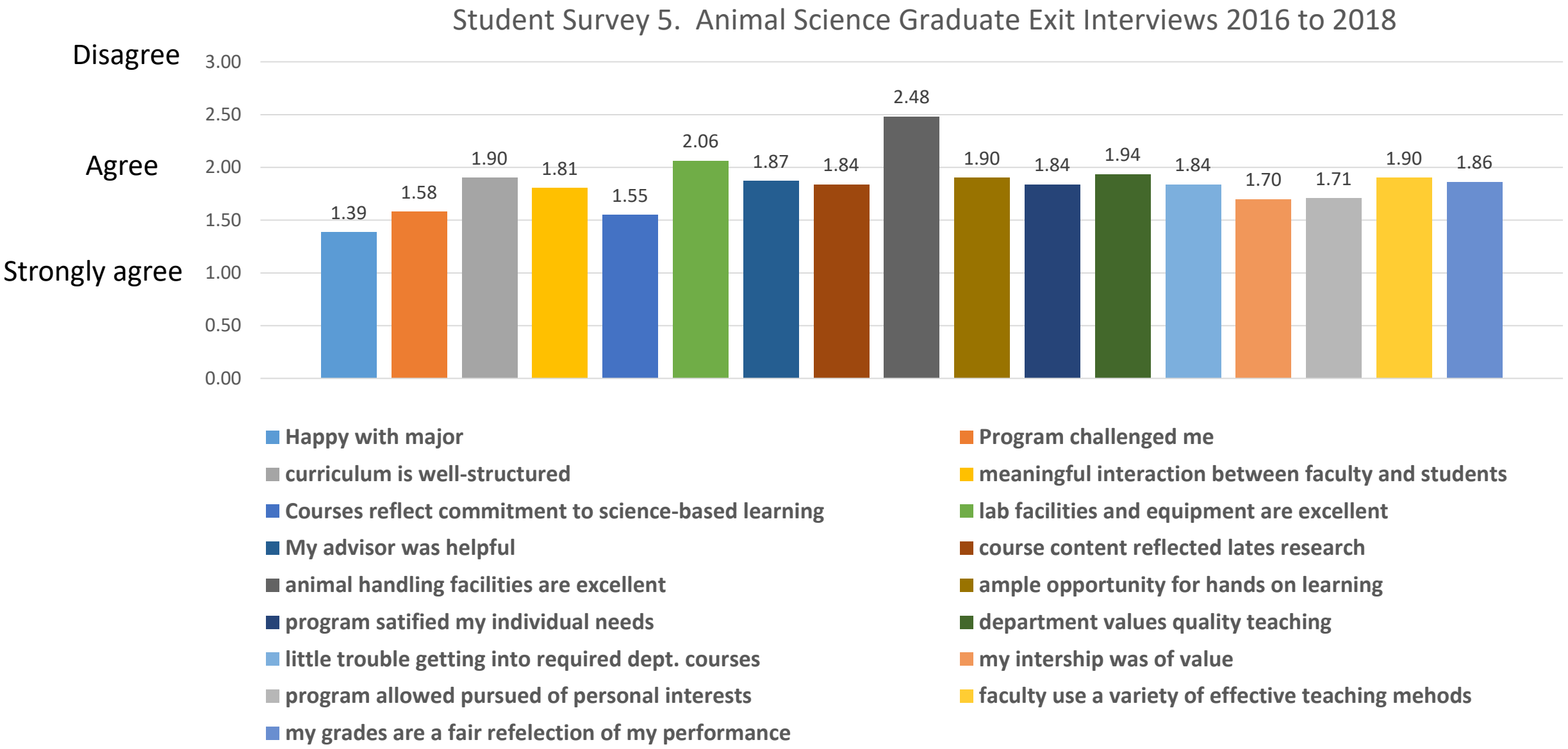

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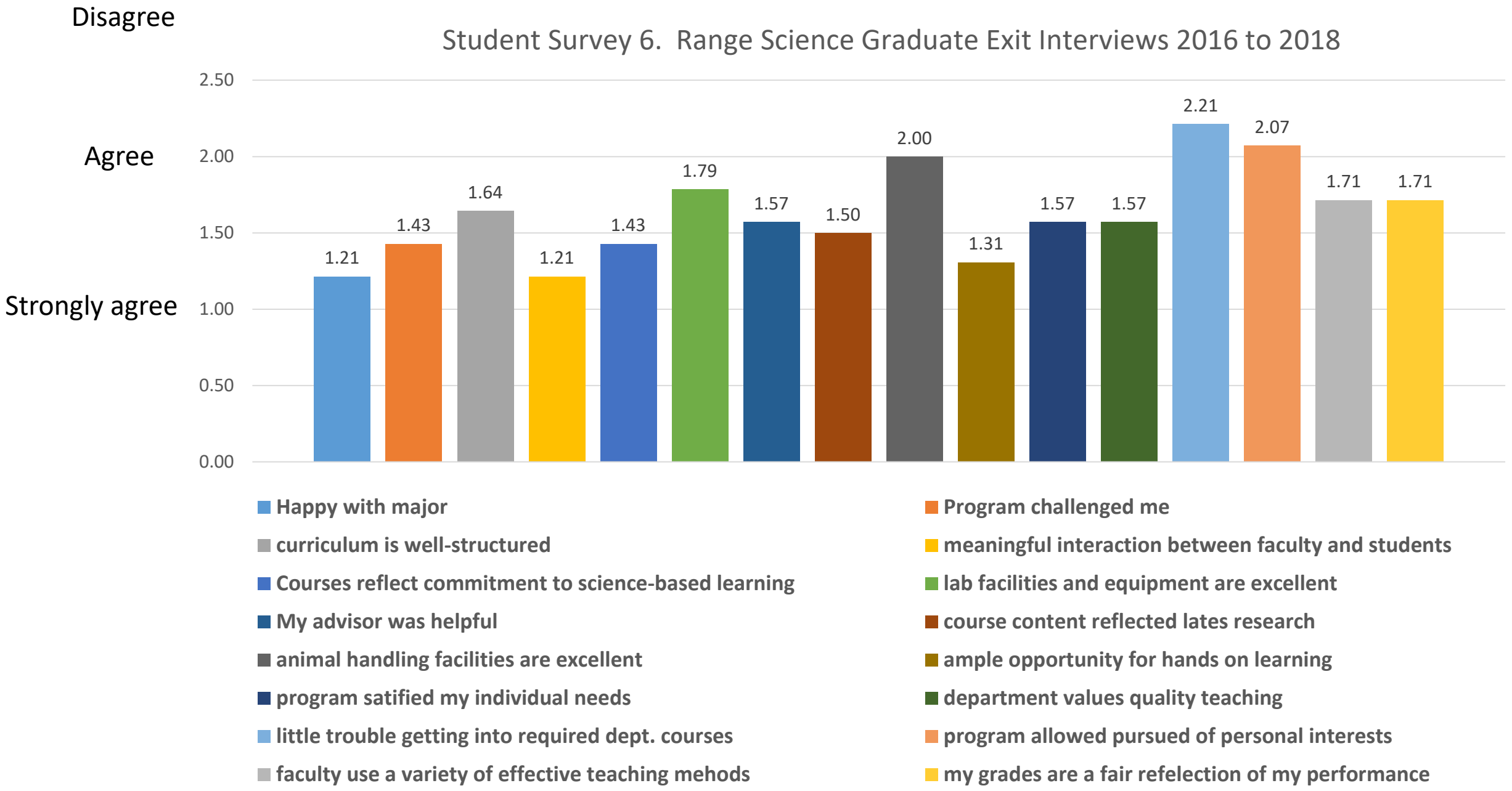

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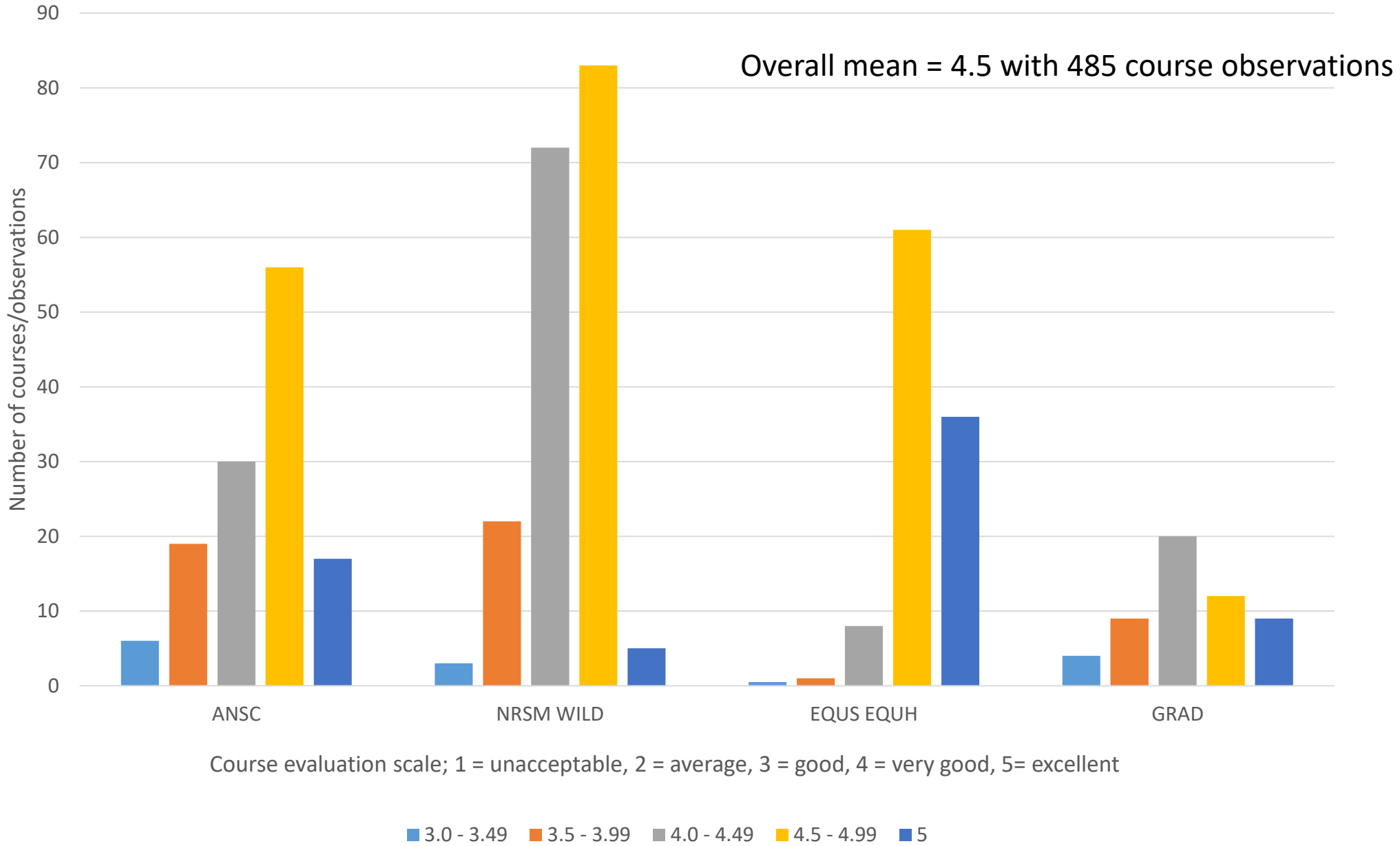
Student Survey 7. Course Evaluations 2012 to 2019



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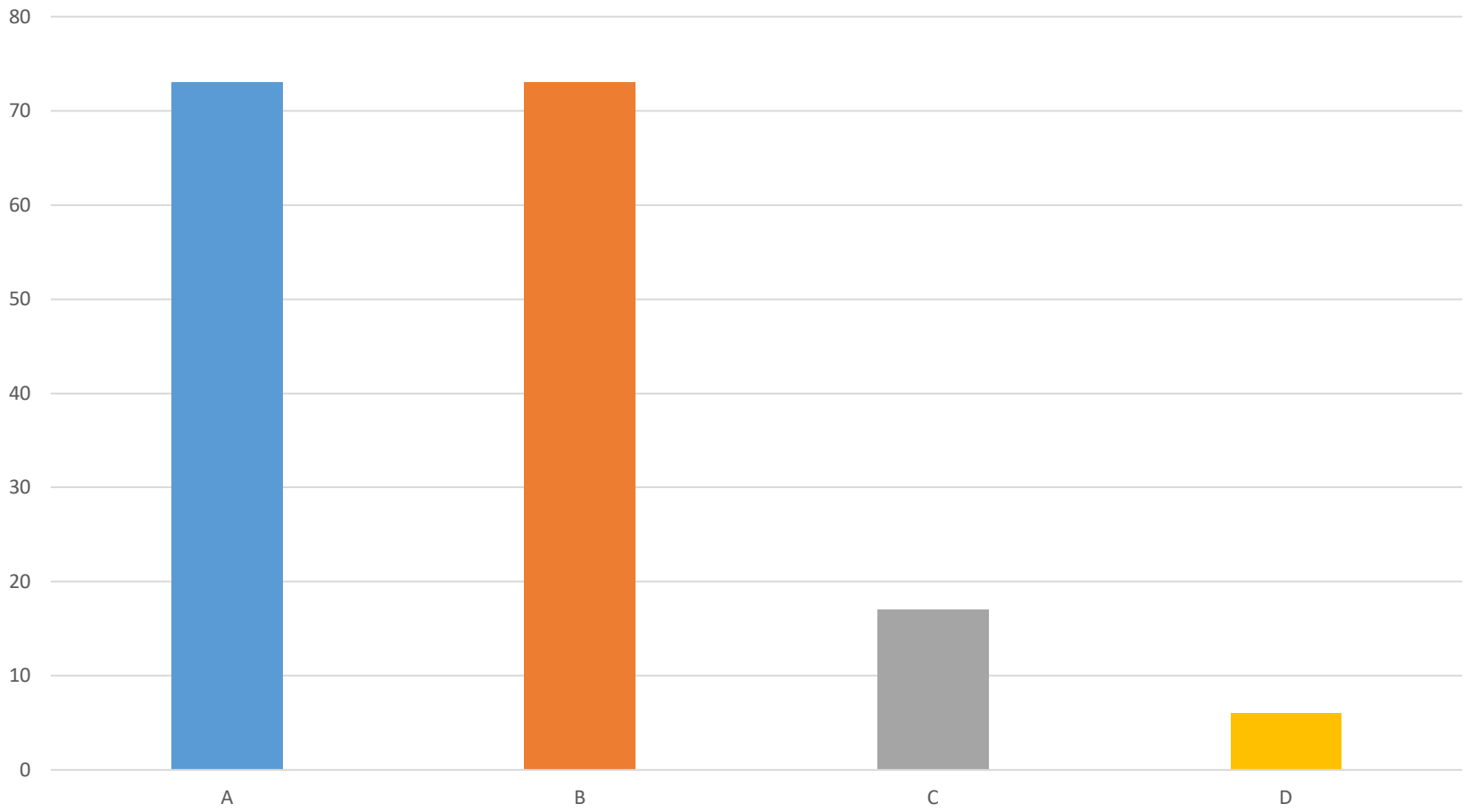
Student Survey 8. 2019 Animal Science Advising Grade Graph



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Student Survey 9. 2019 Student Survey

Survey Questions *	Answer Choices**
Select the category that best describes your age.	18 - 20 Years, 20-25 years, Greater than 25
What is your current year in university?	Freshman, sophomore, junior, senior
If your major is Animal Science or Natural Resources and Rangeland Ecology, select the option you are currently pursuing.	Equine Science, Livestock Management, Science, Rangeland Ecology and Management, Wildlife Habitat Ecology and Management
Choose the number that best describes the number of people in your high school graduating class.	Less than 50, 50-100, greater than 100
Grade your advising	A-D
What do you like best about the Animal and Range Sciences Department?	
What do you like least about the Animal and Range Sciences Department?	
The faculty and staff in Animal and Range Sciences care about my success as a student.	T/F
The faculty are knowledgeable about the subject matter they teach.	T/F
The Faculty and Staff are knowledgeable about changes in the university requirements.	T/F
The degree I selected supports my career choice.	T/F
I am happy with my choice to come to Montana State University.	T/F

*Given to: NRSM 101; NRSM 240; NRSM 455; ANSC 320; ANSC 434

**Removed all non Animal and Range Science Majors from the data.

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Student Survey 10. Examples of Student Career Choices Post-Graduation with a B.S. in Animal Science

Student	Career Destination post-graduation
Bailey Engle	completed her PhD in Animal Science Genetics at TAMU and has gone on to a post-doctoral fellowship at University of Brisbane in Australia
Lauren Kett	completed a MS degree at University of Nebraska Lincoln and is currently employed as a sales specialist for Spurline Feed Store
Olivia Fernandez	graduated from Livestock Industry Option and went on to work for Smithfield Premium Genetics and is currently employed at Cal Poly Pamona maintaining their swine herd.
Anne Hutton	received $75,000 scholarship to fund veterinary school
Kelsey Stoner	received $45,000 scholarship to fund veterinary school
Jessica Roloff	is the Feed Manager for Snake River Cattle Feeders, an Agri Beef Company feedlot
Caleb Reichhardt	PhD student @ Utah State University Animal Sciences
Michaela Blevins	Shipping and Distribution Manager at ORIgen
Katelyn Gould	Membership and Herdbook Services at American Simmental Association
Riley Foster	Neogen Regional Sales Rep
Taylre Sitz	Vet School MSU/WSU Program

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Student Survey 11. 2019 NRRE Student Survey

Class	Current Year	Major	Grade Advising	Like Most	Like Response Code	Like Least	Dislike Response Code	Faculty Care	Faculty Knowledge Subject Matter	Faculty Knowledge Changes Univ	Degree Supports Career	Happy with MSU
NRSM 101	Freshman	NRRE - Rangeland Ecology and Management	B	Learning about the environment	Courses	The large amount of vocabulary memorization that comes with this field	Rigor	True	True	True	True	True
NRSM 101	Freshman	NRRE - Rangeland Ecology and Management	B	There are so many potentail areas to go into and everyone is so willing to help.	Courses	I think some of the courses should have a different number of credits.	Rigor	True	True	True	False	True
NRSM 101	Freshman	Ecology and Management	D	Craig carr	Faculty / Staff	Nothing	Nothing	True	True	False	True	True
NRSM 101	Sophomore	Ecology and Management	A	good proffesors and labs	Faculty / Staff	career advising	Career conne	True	True	True	True	True
NRSM 101	Junior	Ecology and Management	A	yes	NA	no	Nothing	True	True	True	True	True
NRSM 101	Freshman	NRRE - Rangeland Ecology and Management	B	Physical classes	Courses	Readying certain artcles and writing about them	Rigor	True	True	True	True	True
NRSM 240	Junior	NRRE - Rangeland Ecology and Management	A	Interaction between professors and students is always positive and helpful.	Faculty / Staff	Doesn't seem like there is much tutoring available for our department.	Teaching / Tu	True	True	True	True	True
NRSM 240	Senior	NRRE - Rangeland Ecology and Management	A	Knowledge of Proffessors and willingness to help students acheive their goals.	Faculty / Staff	The requirments for students to take classes at particular times but when classes fill up students aren't able to take that specific class at that time. This leads to students having to add another semester or two to their timeline of graduating.	Discipline cou	True	True	True	True	True
NRSM 240	Junior	NRRE - Rangeland Ecology and Management	A	Classes offered	Courses	Course restrictions between majors and schedule conflicts with fall only courses	Discipline cou	True	True	True	True	True
Riparian	Senior	NRRE - Rangeland Ecology and Management	A	Hands-on Labs	Classes	Memorizing plants	Rigor	True	True	True	True	True
Riparian	Senior	NRRE - Rangeland Ecology and Management	A	I love the sense of community and the williness of professors and staff to help students suceed.	Professors / People	I feel like the ARS department does not adequately prepare students to take some of the upper division courses that we are required to take from other departments. For example, in the NRRE major, we are not required to take an introductory plant biology class, but we do have to take a 400-level plant philsology class. I think the ARS department should evaluate if lower level courses are truly preparing students for their upper division coursework.	Discipline cou	True	True	False	True	True
Riparian	Senior	NRRE - Rangeland Ecology and Management	B	The material I learn about.	Classes	The lack of communication with my advisor.	Advising	True	True	True	True	True
Riparian	Senior	NRRE - Rangeland Ecology and Management	A	How helpful professors have been in class and outside of class. I feel like they care about my success.	Professors / People	Can't think of anything off the top of my head	Nothing	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	B	easier to communicate w staff compared to nursing (my original major)	Faculty / Staff		Nothing	True	True	True	True	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	B	Dr.Carr	Faculty / Staff	The summaries in NRSM 101	Rigor	True	True	True	True	True

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NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	C	NRSM102, it's a good class	Courses	The advising and how everyone says to take different classes	Advising	False	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	How friendly everyone is at helping	Opportunities / Learning Environment	Some things seem to be a little unorganized	Disorganizatic	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	C		NA		Nothing	True	True	False	True	True
NRSM 101	Senior	NRRE - Wildlife Habitat Ecology and Management	A	it simple		its simple	Nothing	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	I like the Profs.	Faculty / Staff	That certain classes can only be spring/fall not option for both. Also that NRSM102 is only 1 credit.	Discipline cou	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	Very interesting classes	Courses	Classes that are only offered certain semesters and other classes contradict eachother	Discipline cou	True	True	True	True	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	B	The array of different pathways you can take.	Opportunities / Learning Environment	Nothing	Nothing	True	True	False	True	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	B	About the scientific facts about the environment	Courses	Writing a bunch of papers	Rigor	True	True	True	True	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	A		NA		Nothing	True	True	TRUE	True	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	B	I like the classes related to my major like my Range Plants class.	Courses	I haven't really connected with anyone else in my major.	Social opportu	True	True	True	True	True
NRSM 101	Senior	NRRE - Wildlife Habitat Ecology and Management	B	The diversity within the discipline of rangeland management	Opportunities / Learning Environment	Statistics	Rigor	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	C		NA		Nothing	True	True	False	False	False
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A		NA		Nothing	True	True	False	False	True
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	B	things we dicuss is intersting	Courses	sometimes it's hard to understand.	Rigor	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	B		NA		Nothing	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	Courses offered	Courses	Courses not closely applicable to my major	Core Classes	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	Good Professors	Faculty / Staff	NA	Nothing	True	True	True	True	True
NRSM 101	Sophomore	NRRE - Wildlife Habitat Ecology and Management	B	I like how our professor has us read a varitey of articles	Courses	The lectures are not very knowledgebale	Teaching / Tu	True	True	True	True	False
NRSM 101	Freshman	NRRE - Wildlife Habitat Ecology and Management	A	I enjoy the content, this is something that I look forward to learning. I also very much like my professors. Knowing that they both also enjoy the content as well as very intelligent in these areas.	Courses	So far, I have no dislikes.	Nothing	True	True	True	True	True

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NRSM 240	Senior	NRRE - Wildlife Habitat Ecology and Management	B	I've always liked the outdoors and this department takes students out to do hands on research that we can apply to real life situations.	Courses	I really dont like how MSU started as Montana's College of Agricoulture and now this college doesnt have enough professors/teaches to help students graduate in 4 years. Almost every one of my friends incuding my self has been put on a wait list inorder to get into classes.	Discipline cou	True	True	True	True	True
NRSM 240	Junior	NRRE - Wildlife Habitat Ecology and Management	A	I enjoy the quality of classes offered.	Courses	I would like to see more variability on the classes I choose to obtain my degree.	Discipline cou	True	True	True	True	True
NRSM 240	Sophomore	NRRE - Wildlife Habitat Ecology and Management	A	Everybody has a great attitude	Opportunities / Learning Environment	I hate studying :(	Rigor	True	True	True	True	True
Riparian	Junior	NRRE - Wildlife Habitat Ecology and Management	A	laid back and info	Opportunities / community of the Dept	its distance from everything else	Facilities	True	True	True	True	True
Riparian	Senior	NRRE - Wildlife Habitat Ecology and Management	B	"Hands on" labs	Classes	Not as many guest speakers as other departments	Teaching / Tu	True	True	True	True	True
Riparian	Junior	NRRE - Wildlife Habitat Ecology and Management	A	I like the variety of classes offered.	Classes	I don't like the amount of plant ID that is required	Rigor	True	True	False	True	True
Riparian	Junior	NRRE - Wildlife Habitat Ecology and Management	A	The community, course work, and research opportunities. Everyone is very supportive of each other, the professors seem very interested in each student, and the coursework brings students together to study.	Professors / People	How some professors read off the slides rather than adding their own position on topics and sometimes dont teach us everything needed to know for outdoor labs.	Teaching / Tu	True	True	True	True	True
Riparian	Junior	NRRE - Wildlife Habitat Ecology and Management	B	All of the hands on experience and classes full of conversations, I rarely ever feel like i am simply sitting in a room being lectured at	Classes	I dont think as a department we get enough credit for just how difficult this material is! We are basically learning a new language and way of thinking.	Rigor	True	True	False	True	True
Riparian	Senior	NRRE - Wildlife Habitat Ecology and Management	A	How small it is and how willing the professors are to go out of their way to help students	Professors / People	This isn't really about the department, but not being able to use the printer in ABB when there's class in the computer lab is very frustrating and inconvenient. If it could be moved to one of the atriums I think that most students would be on board.	Facilities	True	True	True	True	True
Riparian	Senior	NRRE - Wildlife Habitat Ecology and Management	B	Not in this exact department, but I enjoy how many elective options there are for different areas of interest	Classes	Some classes definitely should have pre-reqs to best prepare students for difficult material	Discipline cou	True	True	True	True	True

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Riparian	Senior	NRRE - Wildlife Habitat Ecology and Management	B	The staff is very supportive and there's lots of opportunities for field work and hands on experience.	Professors / People	Older range professors don't keep up with the current best practices and science- some seem to be teaching the same material from the 90s, when the field has evolved a ton. Our learning doesn't always match what's presented at Society of Range Management meetings or used by agencies.	Teaching / Tu	True	True	True	True	True
Riparian	Senior	NRRE - Wildlife Habitat Ecology and Management	A	Ecology	Classes	LRES soils class and plant phys	Rigor	True	True	True	True	True

Key		Key	Answers were coded by the below guidelines
Professors / People	Specifically mentioned faculty or staff	Disorganization	Disorganization, lack of communication
Classes	quality of classes	Disciple course offerrings and content	Class schedules causing problems, repetition of material, desire for other classes to be taught, desire for more hands on experience
Facilities	facilities	Advising	Poor advising specifically mentioned
Opportunities / community of the dept	opportunities for growth, helpfullness of staff and	Faculty attitude / performance	Faculty snobs, unresponsive to emails
		Teaching/ Tutoring	Specific complaints about a teaching style, lack of tutoring options
		Nothing	Specifically said nothing, or did not answer the question
		Social opportunities	clubs, opportunities to meet students in major
		Facilities	Quite area, livestock facilities
		Rigor	Classes too hard, do not like assignments
		Core classes outside dept	Courses required that are not relevant to major
		Career Connections	Want more career advice and exposure to careers in field of study

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