DEPARTMENT OF ANIMAL SCIENCES
ANNUAL REPORT
2012 - 2013

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Dear Alumni and Friends of the Animal Sciences Department,

The year has passed quickly, which means that it was a good one! We didn't have a budget reduction exercise, so that is one reason to declare the past year a pleasant one. On a more positive note, there were faculty promotions this year. Jeff Sindelar, State Meat Extension Specialist, was promoted to Associate Professor with tenure. Mark Richards, who has a keen interest in muscle foods lipid oxidation, was promoted to Full Professor. Likewise, Guilherme Rosa, who focuses on statistical genomics, was promoted to Full Professor. Congratulations to these men for their outstanding professional accomplishments! It was also very special that this past spring there were eight individuals from this department who received CALS awards at the April 24, 2013 ceremony. Dennis Anderson from the Arlington Beef Cattle Center and Dianne Raschka, our Financial Specialist 4, each received an Outstanding Classifed Staff Award. Jamie Reichert, who manages the Arlington Swine Research and Teaching Center, received the Academic Staff Excellence in Leadership Award. Mark Cook received the Jung Excellence in Teaching Award. Mark Berres received the Spitzer Excellence in Teaching Award. Tom Crenshaw received the J.S. Donald Short Course Teaching Award. Guilherme Rosa received the Pound Research Award and Dave Thomas received the Spitze Land Grant Faculty Award for Excellence in teaching, research and Extension. Dan Gianola received an honorary doctorate degree from Iowa State University. More recently, Jeff Sindelar received a Distinguished Achievement Award from the American Meat Science Association.

Two of our emeritus professors died this past year. Fred Giesler spent 24 years in this department as our Livestock Extension Specialist, eventually retiring in 1976 as Emeritus Professor. Mr. Giesler had a central role in expanding the Extension staff and broadening the group's programming to the Wisconsin livestock industry. He died on July 24, 2012. Dr. Jan Rapacz was an immunogeneticist in this department from 1970 to 1998. He will be remembered for having developed the familial hypercholesterolemic (FH) swine model. This genetic line of pigs is currently maintained at the Arlington Swine Center and is being actively used by Professor Reed's research group. The FH swine show very close resemblance to human advanced coronary heart disease, thus they have much value for making advances in human medicine. Jan passed away on May 5, 2013.

Our undergraduate enrollment has risen to a new plateau at about 175 students. Our graduate population is now steady at just over 30 students. It is interesting to note that our undergraduate population is about 90% female while the graduate student population is 29% female. In keeping with prior years, international students comprise 35% of our graduate population while we have only one international student in our undergraduate population. Nevertheless, our undergraduate population is ethnically diverse with 14% of our students having African American, Asian American, Hispanic American or Native Hawaiian ethnicities. Our undergraduate course enrollments are large. AS 101 had 132 students this past fall. AS 434, Reproductive Physiology, had 84 students, which is a huge number considering that Dr. John Parrish offers a hands-on lab section along with the lecture section.

Funding for graduate student stipends is very challenging to obtain because the funding for research is so limited. Consequently, competition is intense. Over the past four years, 35% of grant proposals submitted by faculty members have been funded. This is a good percentage, but not sufficiently large to allow faculty members to expand their graduate programs. Consequently, 47% of our graduate students are funded by research assistantships, 13% by teaching assistantships, and 34% have no, low or other funding. Occasionally, the latter group of students receives funding from their home government. It

seems to me that it has become more common to encounter students who are not funded. The research funding environment is just very challenging at this time.

I conduct program assessment in two venues with our undergraduates. One venue is "Dinner with Dan" in which I meet with them as a group after one of their Senior Seminar classes. I also invite graduating Seniors to meet with me one-on-one just prior to their graduation. It has been gratifying to have them express their appreciation for hands-on contact with animals and their generally favorable reports about the accessibility of our instructors for advice. Since we have so many students matriculate in this major with intentions of becoming a companion-animal veterinarian, there are some who wish that the curriculum was more oriented toward companion animals. Thus far, the faculty in this department have been unwilling to seek the faculty member and facilities that such a request involves. In contrast, faculty members in this department would like to have one or more female faculty colleagues to serve as role models for our female undergrads. Unfortunately, we have been unsuccessful in this quest.

Lastly, I am enthused to report that our capital initiative to build a new meat science lab is progressing nicely. The project is estimated to cost $42.8 million, with $22.8 million to come from State bonding authority and $20 million to come from non-state, private sector donations. Just recently, Governor Walker signed the State budget which included our project's bonding authority. This action was made possible by the dedicated support of Rep. Dean Kaufert (Neenah) and Rep. Joan Ballweg (Markesan). Our industrial development efforts are being shaped and aided by our Meat Science Advisory Committee: Kevin Ladwig (Chair), Johnsonville Foods; Chris Salm, Salm Partners, Denmark, WI; Steve Van Lannen, American Foods Group; Petri Papinaho, Jennie-O Turkey Store; Tricia White, Oscar Mayer/Kraft Foods; Jim Peterson, Alkar RapidPak; Tom Hoffmann, Mepaco-Apache Stainless; Steve Campano, Hawkins Inc.; Bob Hanson, Hanson Tech; Gary Underwood, Red Arrow Products Co; and Fritz Usinger, Usinger's Sausage. We have $7.6 million of pledged support and anticipate a significant gift. If all goes as planned, occupancy of the new building on campus would be in Summer 2017.

If you have occasion to return to UW-Madison, I would welcome a conversation with you. One of the great joys of being a professor is observing the professional growth of our students. Therefore, please do stop at the department to update us!

With kind regards,

Daniel M. Schaefer

Daniel M. Schaefer
Professor and Chair

Fall 2012

	Undergraduate			Graduate		
	Dept.[1,3]	CALS[1]	Univ.[1]	Dept.[1]	CALS[1]	Univ.[1]
Total No.	182	3174	29167	31	913	9201
Gender						
Men	19	1295	14108	22	435	4738
Women	163	1879	15059	9	478	4463
Ethnicity						
Native American		32	274		7	94
African American	5	74	790		14	259
Asian American	6	264	1892		36	422
Hispanic American	12	124	1272	2	44	371
Native Hawaiian	2	14	94		5	14
Caucasian	152	2457	22594	18	539	5367
International	1	179	2033	11	243	2391
Other	4	30	218		25	283

Spring 2013

	Undergraduate			Graduate		
	Dept.[1,3]	CALS[1]	Univ.[1]	Dept.[1]	CALS[1]	Univ.[1]
Total No.	178	3247	27588	32	858	8789
Gender						
Men	19	1322	13338	22	419	4570
Women	159	1915	14250	10	439	4219
Ethnicity						
Native American	2		260			86
African American	6		751			248
Asian American	8		1794			405
Hispanic American	11		1214	2		359
Native Hawaiian			85			12
Caucasian	149		21308	18		5092
International	2		1993	12		2310
Unknown			186			277

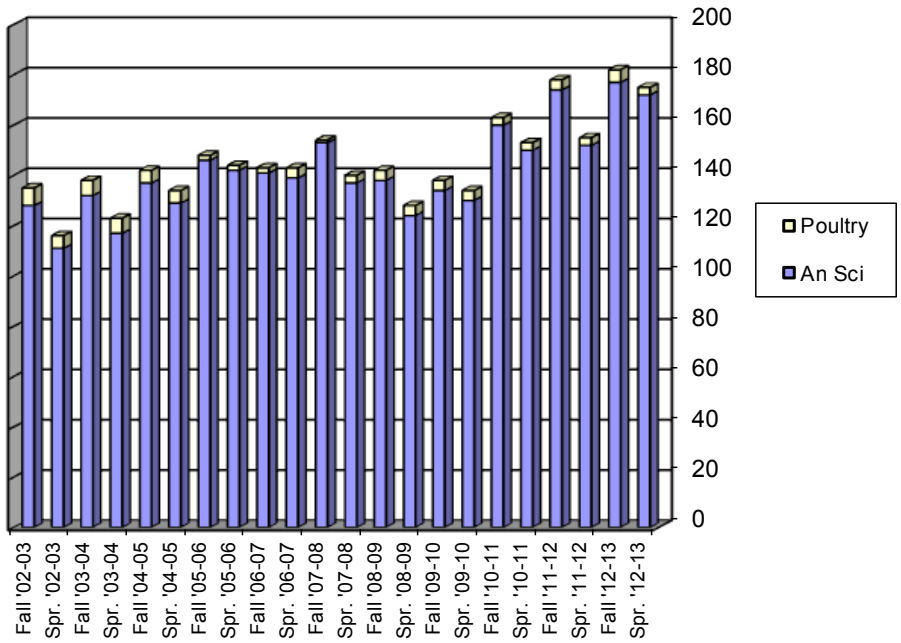
[2] Fall 2012-13, http://registrar.wisc.edu/documents/Stats_all_2012-2013Fall.pdf, all figures as of the end of the sixth week of instruction.
Spring 2012-13, http://registrar.wisc.edu/documents/Stats_all_2012-2013Spring.pdf, all figures as of the end of the sixth week of instruction.

[3] Combined Animal Science and Poultry Science figures.

Enrollment Trend
Undergraduate Majors in Animal Sciences and Poultry Science

	An Sci	Meat & An	Poultry	Total
Spr. '12-13	172		3	175
Fall '12-13	177		5	182
Spr. '11-12	152		3	155
Fall '11-12	174		4	178
Spr. '10-11	150		3	153
Fall '10-11	160		3	163
Spr. '09-10	130		4	134
Fall '09-10	134		4	138
Spr. '08-09	124		4	128
Fall '08-09	138		4	142
Spr. '07-08	137		3	140
Fall '07-08	153		1	154
Spr. '06-07	139		4	143
Fall '06-07	141		2	143
Spr. '05-06	142		2	144
Fall '05-06	146		2	148
Spr. '04-05	129		5	134
Fall '04-05	137		5	142
Spr. '03-04	117		6	123
Fall. '03-04	132		6	138
Spr. '02-03	111		5	116
Fall '02-03	128		7	135

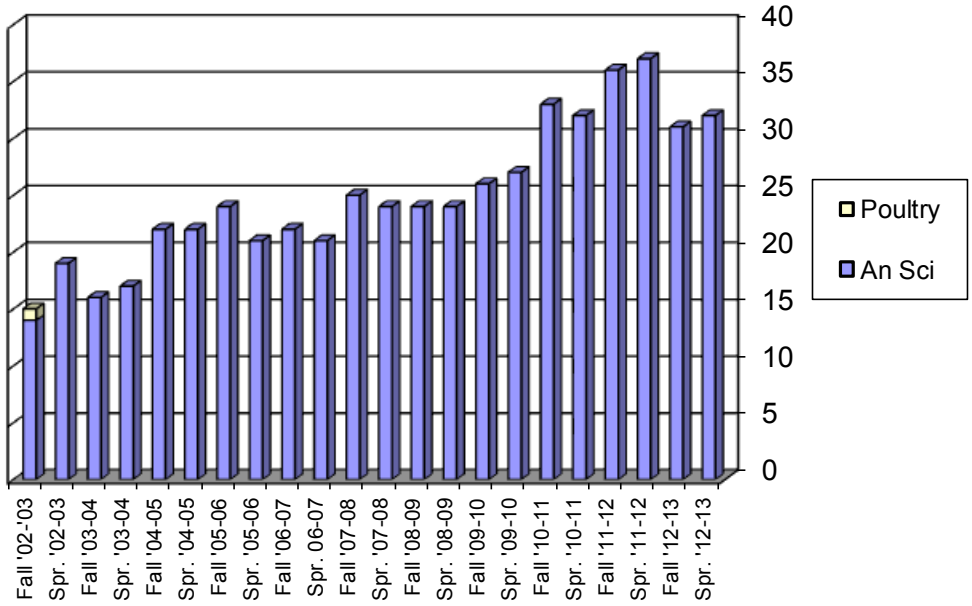
Undergraduate History



Enrollment Trend
Graduate Majors in Animal Sciences and Poultry Science

	An Sci	Meat & An	Poultry	Total
Spr. '12-13	32			32
Fall '12-13	31			31
Spr. '11-12	37			37
Fall '11-12	36			36
Spr. 10-11	32			32
Fall '10-11	33			33
Spr. '09-10	27			27
Fall '09-10	26			26
Spr. '08-09	24			24
Fall '08-09	24			24
Spr. '07-08	24			24
Fall '07-08	25			25
Spr. '06-07	21			21
Fall '06-07	22			22
Spr. '05-06	21			21
Fall '05-06	24			24
Spr. '04-05	22			22
Fall '04-05	22			22
Spr. '03-04	17			17
Fall '03-04	19			19
Spr. '02-03	19			19
Fall '02-03	14		1	15

Graduate History



Animal Sciences

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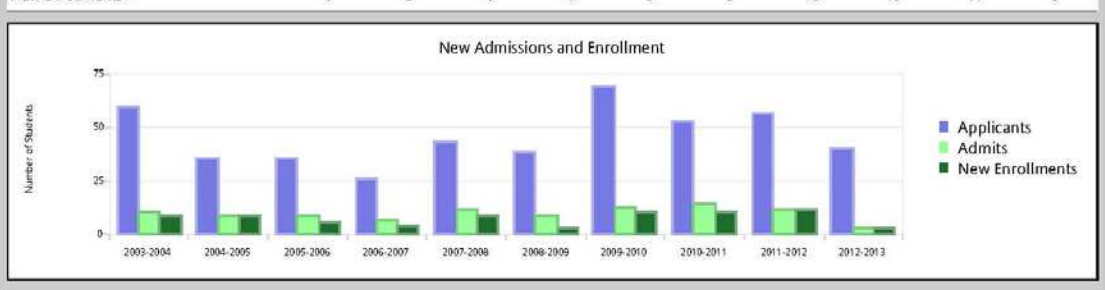
Admissions and New Enrollment Data

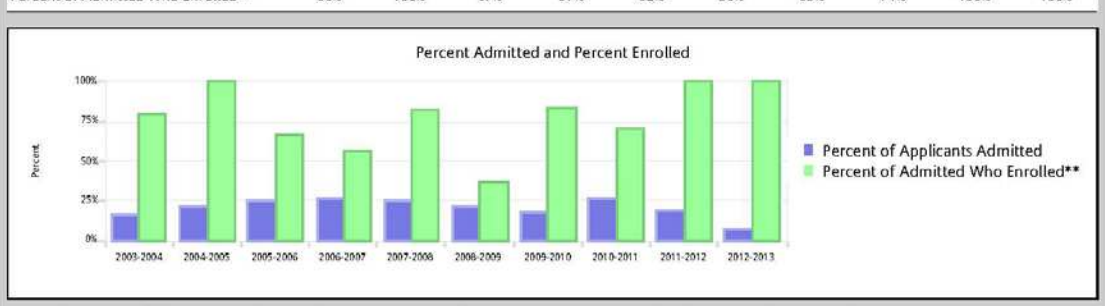
Headcount of New Graduate Program Applicants by Year*

	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Applicants	60	36	36	26	43	38	69	53	57	40
Admits	10	8	9	7	11	8	12	14	11	3
New Enrollments**	8	8	6	4	9	3	10	10	11	3



Percent Admitted and Percent Enrolled by Year*

	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Percent of Applicants Admitted	17%	22%	25%	27%	26%	21%	17%	26%	19%	8%
Percent of Admitted Who Enrolled**	80%	100%	67%	57%	82%	38%	83%	71%	100%	100%



Headcount of New Graduate Program Applicants by Year* and Diversity Categories

		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Domestic Non-Targeted***	Applicants	27	22	16	16	18	16	29	25	20	12
	Admits	6	5	5	4	9	4	4	8	7	1
	New Enrollments**	5	5	4	3	8	1	4	8	7	1
Domestic Targeted Minorities***	Applicants			4	2	3	2	4	1		2
	Admits			1	1			1			1
	New Enrollments**							1			1
International***	Applicants	33	14	16	8	22	20	36	27	37	26
	Admits	4	3	3	2	2	4	7	6	4	1
	New Enrollments**	3	3	2	1	1	2	5	2	4	1

*These data are grouped by fiscal year (summer, fall, spring), the standard measure used by Academic Planning & Analysis in the Office of the Provost.
**New students in these data are new to the graduate program.
***Targeted Minorities include African-American, Native American, Hispanic American, and Southeast Asian (Cambodians, Laotians, Vietnamese, and Hmong) students. Non-Targeted students include White, Other Asians, Native Hawaiians, and Unknown students. International students are assigned to the separate international category regardless of their ethnicity.

Dataview Sources: UW_STDNT_GRAD_APPLICANTS, UW_STDNT_GRAD_DECISIONS, UW_RETENTION_PLAN_HISTORY, UW_STDNT_MULTITERM

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Enrollment Data

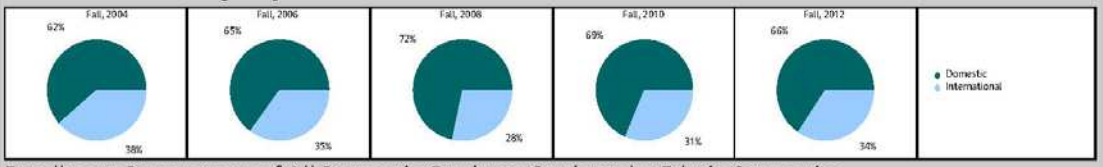
Enrollment Headcounts by Ethnic Category

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
White	11	15	14	15	17	17	15	19	22	19
Hispanic American							1	1	1	2
Other Asian American							1	1		
International	8	10	12	9	8	7	9	10	11	11
Unknown	1	1	2	2	1	1	1	1	1	
Total	20	26	28	26	26	25	27	32	35	32

Enrollment Percentages by Diversity Category

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
Domestic Non-Targeted*	60%	62%	57%	65%	69%	72%	63%	66%	66%	59%
Domestic Targeted Minorities*							4%	3%	3%	6%
International*	40%	38%	43%	35%	31%	28%	33%	31%	31%	34%

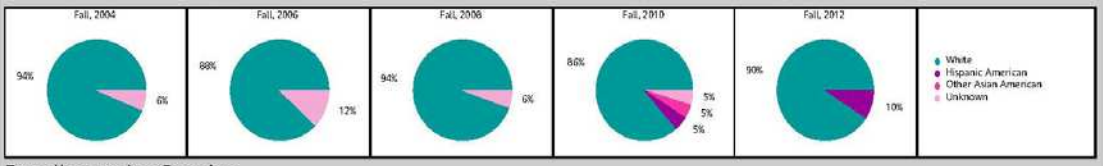
Enrollment Percentages by Domestic / International Student Status



Enrollment Percentages of All Domestic Graduate Students by Ethnic Categories

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
White	92%	94%	88%	88%	94%	94%	83%	86%	92%	90%
Hispanic American							6%	5%	4%	10%
Other Asian American							6%	5%		
Unknown	8%	6%	13%	12%	6%	6%	6%	5%	4%	

Enrollment Percentages of All Domestic Graduate Students by Ethnic Category



Enrollment by Gender

	Fall, 2003		Fall, 2004		Fall, 2005		Fall, 2006		Fall, 2007		Fall, 2008		Fall, 2009		Fall, 2010		Fall, 2011		Fall, 2012	
Female	8	40%	10	38%	11	39%	10	38%	10	38%	9	36%	9	33%	11	34%	12	34%	10	31%
Male	12	60%	16	62%	17	61%	16	62%	16	62%	16	64%	18	67%	21	66%	23	66%	22	69%
Total	20		26		28		26		26		25		27		32		35		32	

*Targeted Minorities include African-American, Native American, Hispanic American, and Southeast Asian (Cambodians, Laotians, Vietnamese, and Hmong) students. Non-Targeted students include White, Other Asians, Native Hawaiians (new category in 2009), and Unknown students. International students are assigned to the separate international category regardless of their ethnicity.

Dataview Sources: UW_RETENTION_STUDENT, UW_RETENTION_PLAN_HISTORY, UW_RETENTION_SEM_HISTORY, UW_STDNT_MULTITERM, UW_STDNT_PLAN_MULTITERM, UW_UA_OCTOBER_PAYROLL

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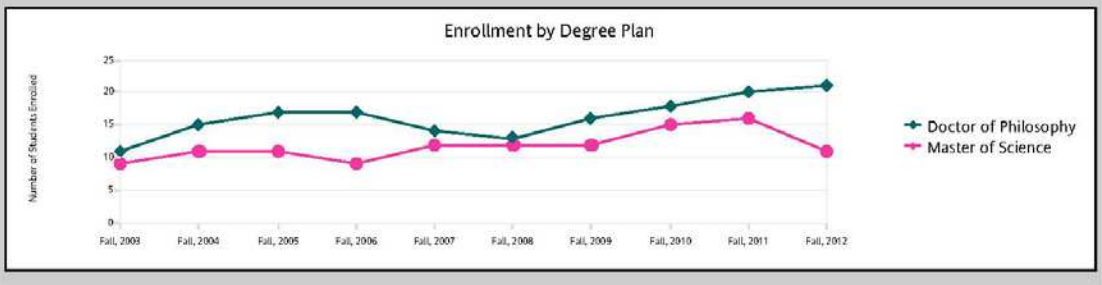
Enrollment Headcounts by Degree Plan

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
Doctor of Philosophy	11	15	17	17	14	13	16	18	20	21
Master of Science	9	11	11	9	12	12	12	15	16	11
Total*	20	26	28	26	26	25	28	33	36	32



*Students may be enrolled in more than one degree plan and be counted more than once.

Enrollment Headcount by Academic Load*

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
Full-Time	17	22	24	22	23	21	22	27	29	25
Part-Time	3	4	4	4	3	4	5	5	6	7
Total	20	26	28	26	26	25	27	32	35	32

*Graduate students are considered full-time by the Graduate School if they are enrolled in 6 credits and have at least a 33% TA or PA appointment or if they are enrolled in 4 credits and have at least a 50% TA or PA appointment. Please see the Graduate School's Academic Policies and Procedures for more information. http://www.grad.wisc.edu/acadpolicy/index.html.

Funding Data

Headcount of Students with an Appointment of 33% or Higher*

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
Fellows					1	2	1	2	1	1
Research Assistants	11	15	15	16	17	12	18	14	16	15
Teaching Assistants**			2			2	1	5	5	4
Project Assistants					1			2	1	1
No/Low/Other Funding*	9	11	11	10	7	9	7	9	12	11
Total	20	26	28	26	26	25	27	32	35	32

Percentage of Students with an Appointment of 33% or Higher*

	Fall, 2003	Fall, 2004	Fall, 2005	Fall, 2006	Fall, 2007	Fall, 2008	Fall, 2009	Fall, 2010	Fall, 2011	Fall, 2012
Fellows					4%	8%	4%	6%	3%	3%
Research Assistants	55%	58%	54%	62%	65%	48%	67%	44%	46%	47%
Teaching Assistants**			7%			8%	4%	16%	14%	13%
Project Assistants					4%			6%	3%	3%
No/Low/Other Funding*	45%	42%	39%	38%	27%	36%	26%	28%	34%	34%

*A graduate student fellowship, traineeship, or assistantship of at least 33% full-time equivalent (FTE) carries with it tuition remission benefits and eligibility for heath insurance. These counts include students whose appointment(s) have a combined FTE of 33% or higher. Students who have multiple appointments were counted once in the appointment with the higher FTE or in the order above for those with multiple appointments with the same FTE. Students with funding outside of the university and students with appointments that are less than 33% are included in the No/Low/Other Funding category.
**Lecturer (SA) appointments are included in the TA category.

Dataview Sources: UW_UA_OCTOBER_PAYROLL, UW_RETENTION_PLAN_HISTORY

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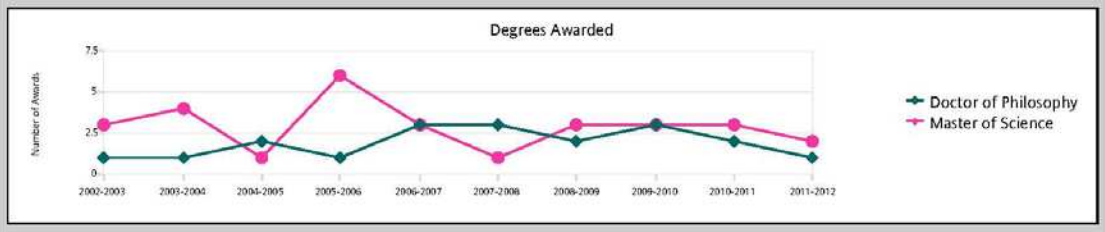
Degree Data

Degrees Awarded by Year*

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Doctor of Philosophy	1	1	2	1	3	3	2	3	2	1
Master of Science	3	4	1	6	3	1	3	3	3	2
Total	4	5	3	7	6	4	5	6	5	3



*Years are grouped by fiscal year graduations (Summer, Fall, Spring), the standard measure used in the campus Data Digest. Data includes degrees recorded as of October 1, 2012. Students who earned multiple degrees in a year are counted twice.

Enrolled Terms to Degree*

	Average Fall and Spring Term Count	Median Fall and Spring Term Count	Average Summer Term Count	Median Summer Term Count
Doctor of Philosophy	11.6	10	4.4	4
Master of Science	4.6	4	2.1	2

*Terms to degree information is based on degrees awarded from the summer of 2002 through spring of 2012 and is a count of all terms enrolled in the degree-granting program prior to the degree. Doctoral time to degree will include time spent on a masters degree if that masters was in the same program.

Dataview Sources: UW_RETENTION_AWARDS_MAIN, UW_RETENTION_AWARDS_PLAN, UW_RETENTION_PLAN_HISTORY, UW_STDNT_ACAD_PLAN_ATTRIBUTES

Doctoral Program Years to Degree*

Number of Graduates	Graduate Level	Doctoral Level	Final Academic Program	Final PhD Program	Candidacy in Final PhD Program
7	5.73	5.73	5.73	5.73	1.4

Time to Degree Markers:
Graduate Level = Time as a graduate student at UW in any program
Doctoral Level = Time as a doctoral student at UW in any program
Final Academic Program = Time as a graduate student at UW in the degree-granting program
Final PhD Program = Time as a doctoral student at UW in the degree-granting program
Candidacy in Final PhD Program = Time as a dissertator at UW in the degree-granting program

*The data are measures of elapsed time to degree from various markers for degrees earned between fall of 2008 and spring of 2011. The numbers shown represent the median values.

Source: Academic Planning & Institutional Research, Provost's Office

10-Year Doctoral Completions Rates for 1998-2002 Cohorts*

Cohort Size	% PhD Completed	% Master's Completed (No PhD)	% Total Degrees Completed
13	69%	8%	77%

*Doctoral completions are based on entrance cohorts, determined by the first term that a student is in a PhD plan in a given program, even if they earn a Master's degree after that term or are enrolled in a Master's program in previous terms. The cohort represented consists of students whose first term in a doctoral program was in or between Summer, 1997 and Spring, 2002.

Source: Academic Planning & Institutional Research, Provost's Office

Undergraduate and Graduate Courses

Fall Semester 2012

Course	Title	No. Sect.	Enrolled	Instructor
101	Livestock Production	001	132	Combs/Cook
101	Livestock Production	301	68	Combs/Cook
101	Livestock Production	302	64	Combs/Cook
200	Bio. & Appreciation of Companion Animals	001	133	Kean/Wentworth
220	Growth, Composition & Eval. of Meat An.	001	17	Russell
299	Independent Study	IND	9	
370	Livestock Production & Health	001	20	Reed
375	Assessing Animal Welfare	001	21	Jobsis
399	Coord Internship/Cooprtv Education	IND	1	
414	Ruminant Nutrition	301	21	Wattiaux
415	Application of Monogastric Nutrition Principles	001	8	Crenshaw
431	Beef Cattle Production	001	7	Schaefer/Kirkpatrick
434	Reproductive Physiology	001	84	Parrish
434	Reproductive Physiology	301	18	Parrish
434	Reproductive Physiology	302	17	Parrish
434	Reproductive Physiology	303	17	Parrish
434	Reproductive Physiology	304	18	Parrish
434	Reproductive Physiology	305	14	Parrish
435	Animal Sciences Proseminar	001	24	Albrecht/Reed
515	Commercial Meat Processing	001	12	Claus/Milkowski
681	Senior Honor Thesis	IND	1	
699	Special Problems	IND	25	
725	Muscle Biology	001	5	Greaser
799	Practicum in Animal Sciences Teaching	IND	1	
875	Endocrine Physiology	001	8	Patankar
951	Seminar in Animal Breeding	001	5	Khatib
954	Seminar in Endocrinology-Reproductive Physiology	001	35	Bird
990	Research	IND	29	

Spring Semester 2013

Course	Title	No. Sect.	Enrolled	Instructor
110	Animal Handling	001	13	Jobsis
150	Career Orientation: Animal Sciences/Poultry Sci.	001	20	O'Rourke
200	Bio. & Appreciation of Companion Animals	001	126	Kean
221	Advanced Meat Animal Eval Lab	001	7	Russell
250	Horse Science & Management	001	24	Sandberg
299	Independent Study	IND	21	
305	Intro-Meat Science & Technology	001	43	Claus
	Intro-Meat Science & Technology	301	23	Claus
	Intro-Meat Science & Technology	302	20	Claus
311	Comparative Animal Nutrition	001	76	Armentano
313	Animal Feeds and Diet Formulation	001	19	Armentano

Spring Semester 2013 (con't)

Course	Title	No. Sect.	Enrolled	Instructor
313	Animal Feeds and Diet Formulation	002	17	Armentano
320	Animal Health & Disease Management	001	81	Fadl
321	Food Laws and Regulations	001	55	Theis
361	Intro. to Animal and Veterinary Genetics	001	59	Khatib/Shook Kirkpatrick/Thomas
361	Intro. to Animal and Veterinary Genetics	301	35	Khatib/Shook Kirkpatrick/Thomas
361	Intro. to Animal and Veterinary Genetics	302	24	Khatib/Shook Kirkpatrick/Thomas
362	Veterinary Genetics	001	22	Khatib/Kirkpatrick
363	Principles of Animal Breeding	001	34	Shook/Thomas
375	Human/Animal Symbiosis I	002	13	Cook
375	Vertebrate Physiology	001	22	Giakoumopoulos
375	Ag in Emerging Economies: Dairying in Mexico	007	18	Wattiaux
399	Coord Internship/Cooprtv Education	IND	2	
430	Sheep Production	001	19	Thomas
468	Envir. Impact-Livestock Operation	001	17	Wattiaux
520	Ornithology	001	91	Berres
521	Birds of Southern Wisconsin	301	18	Berres
521	Birds of Southern Wisconsin	302	17	Berres
521	Birds of Southern Wisconsin	303	15	Berres
521	Birds of Southern Wisconsin	304	15	Berres
682	Senior Honors Thesis	IND	1	
699	Special Problems	IND	17	
799	Practicum in Animal Sciences Teaching	IND	3	
875	Selected Topics in Reproductive Physiology	001	8	Magness
931	Seminar in Animal Nutrition	001	8	Crenshaw
951	Seminar in Animal Breeding	001	5	Weigel
954	Seminar in Endocrinology-Reproductive Physiology	001	34	Bird
990	Research	IND	31	

Summer Semester 2013

Course	Title	No. Sect.	Enrolled	Instructor
299	Independent Study	IND	1	
314	Poultry Nutrition	001	15	Lilburn/Kean
315	Poultry Enterprise Management	001	14	Kean/Koelkebeck
375	Lab Tech in Mammalian Gamete & Embryo Biology	001	10	Monson
399	Coord. Internship/Cooperative Education	IND	5	
503	Avian Physiology	001	16	Berres
508	Poultry Products Technology	001	17	Richards
511	Breeder Flock and Hatchery Management	001	16	Kean
512	Management for Avian Health	001	15	Cook
699	Special Problems	IND	2	
799	Practicum-Animal Sciences Teaching	IND	1	
875	Prediction of Complex Traits – Whole Genome Markerq001		9	Gianola
990	Research	IND	19	

STUDENT ENROLLMENT:	FALL 2012	SPRING 2013
Undergraduate	182	175
Graduate	31	32

DEGREES CONFERRED:	SUMMER 2012	FALL 2012	SPRING 2013
B.S.	2	7	16
M.S	4	1	1
Ph.D.	2	0	2

UNDERGRADUATE DEGREES CONFERRED

SUMMER 2012 – BS ANIMAL SCIENCES
Kristin Foster – Business
Rebecca Keel – Production

FALL 2012 – B.S. ANIMAL SCIENCES
Tawny Chandler – Business
Megan Dernetz – Natural Science
Katherine Duchow – Ag & Life Sciences
Ashley Krisp – Natural Science
Kelly Schroeder – Natural Science
Amanda Veum – Business

FALL 2012 – B.S. POULTRY SCIENCE
Kristin Merriman – Production

SPRING 2013– B.S. ANIMAL SCIENCES
Jennifer Babcock – Natural Science
Katrina Brickner – Ag & Life Sciences
Marjan Fateriоun – Business
Jessica Halbach – Natural Science
Elizabeth Lynch – Natural Science
Teyanna Marx – Business
Melissa Paine – Ag & Life Sciences
Abigail Putzer – Natural Science
Amanda Rader – Ag & Life Sciences
Kelli Retallick – Ag & Life Sciences
Lauren Schafer – Ag & Life Sciences
Chantal Schroer – Natural Science
Lija Siltumens – Natural Science
Melissa Spencer – Natural Science
Lauryn Vanderwerff – Ag & Life Sciences
Rachel Wenninger – Natural Sciences

GRADUATE DEGREES CONFERRED

Mary Berg
Summer 2012
MS Animal Sciences
Major Professor: Amy Radunz
Effects of Maternal Dietary Energy Source during Mid- to Late-Gestation on Maternal Plasma Characteristics, Glucose Tolerance and Uterine Blood Flow in Sheep

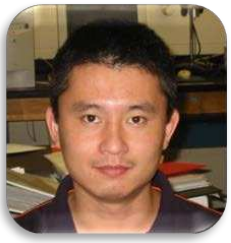
Jeffrey Booth
Summer 2012
MS Animal Sciences
Major Professor: Tom Crenshaw
Economic assessment of feeding Availa-Zn 100 in swine diets supplemented with Paylean

Russell Burgett
Summer 2012
MS Animal Sciences
Professor: Amy Radunz
Effects of feeding dams dried distillers grains with solubles prepartum on progeny growth, body composition, glucose tolerance and reproductive performance in sheep

Huihui Duan
Fall 2012
MS Animal Sciences
Major Professors: Guilherme Rosa & Daniel Gianola
Whole Genome Prediction Within and Across Environments: An Application to Wheat Yield

Eric Grunwald
Summer 2012
PhD Animal Sciences
Major Professor: Mark Richards
Oxidative Processes in Muscle Food Systems: Exploring the Relationships Between Hemeproteins and Lipids

Shijun Lee
Summer 2012
PhD Animal Sciences
Major Professor: Marion Greaser
Rbm20: A newly characterized splicing factor controlling titin alternative splicing



Nora O'Reilly
Spring 2013
PhD Animal Sciences
Major Professor: Ralph Albrecht
Characterization and Functionalization of Iron-Oxide Nanoparticles for Use as Potential Agents for Cancer Thermotherapy

Jonathan Pleitner
Fall 2012
PhD Animal Sciences
Major Professor: Marion Greaser
Investigations into the Effects of Altered Titin Isoform Expression in Striated Muscle

Jaclyn Rehl
Summer 2012
MS Animal Science
Major Professor: Amin Fadl
GidA Expressin in Salmonella is Modulated Under Certain Environmental Conditions.

Mitchell Schaefer
Fall 2012
MS Animal Sciences
Major Professor: Dan Schaefer
Stocker Steer Performance On Tall Fescue Or Meadow Fescue Alone Or In Binary Mixture With White Clover

Student	Scholarship	Amount
Aigai, B.	Dorothy Strong Scholarship	1,000
Jodi, B.	Larry D. Satter AWA Scholarship	400
Jodi, B.	John A. Spurrell Scholarship	1,500
Robyn, B.	Dorothy Strong Scholarship	1,000
Devan, B.	Pork Producers of Wisconsin Industry Scholarship	750
Alexus, B.	Wisconsin Livestock and Meat Council Award	1,100
James, D.	Manitowoc County UW Agriculture Alumni Association	750
Jenna, F.	Ferdinand Plaenert New Freshman Excellence Award	1,500
Mary, G.	John A. Spurrell Scholarship	1,500
Nicole, G.	Wisconsin Livestock and Meat Council Award	1,100
Jillian, H.	Ruth and Carl Miller Academic Merit Award	1,500
McKenna, K.	Henry Steenbock Scholarship	1,000
McKenna, K.	Wisconsin Livestock and Meat Council Award	1,100
Anna, K.	Sheboygan County Farm Progress/Farm Technology Days Scholarship	800
Taylor, K.	Sheboygan County Farm Progress/Farm Technology Days Scholarship	2,000
Alexandra, K.	CHS Foundation (Cenex Harvest States) Scholarship	2,000
Alexandra, K.	Dorothy Strong Scholarship	1,000
Casey, K.	Ferdinand Plaenert New Freshman Excellence Award	1,200
Douglas, L.	Peter Young Student Assistance Grant	1,000
Rachel, L.	Dorothy Strong Scholarship	1,000
Amanda, N.	Ruth and Carl Miller Academic Merit Award	1,500
Meagan, N.	Daughters of Demeter/O.N. Allen Merit Scholarship	1,000
Mackenzie, N.	Paul McShane Memorial Scholarship	2,000
Mackenzie, N.	CHS Foundation (Cenex Harvest States) Scholarship	2,000
Taylor, O.	Wisconsin Rural Opportunities Foundation Award	1,000
Emily, P.	Wisconsin Livestock and Meat Council Award	1,100
Emily, P.	Dorothy Strong Scholarship	1,000
Amanda, R.	Wisconsin Rural Opportunities Foundation Award	1,000
Amanda, R.	Helgren Family Wisconsin Rural Youth Scholarship	1,000
Amanda, R.	Olaf Larson Wisconsin Rural Youth Scholarship	200
Samuel, R.	Albert J and Adelaide Riker Scholarship	1,000
Samantha, R.	Wisconsin Cattlewomen's Association Scholasrhip	500
Kelli, R.	Wisconsin Rural Opportunities Foundation Award	1,000
Amanda, R.	Dorothy Strong Scholarship	1,000
Amanda, R.	Walter C. and Mabel J. Topel Animal Sciences Scholarship	1,400
Megan, T.	John A. Spurrell Scholarship	1,500
Megan, T.	Dorothy Strong Scholarship	1,000
Elizabeth	Ferdinand Plaenert New Freshman Excellence Award	600
Lauryn, V.	Babcock House Alumni Scholarship	500
Lauryn, V.	Dennis R. Buege Meat Science Endowed Student Assistance	1,000
Lauryn, V.	John W. Renk Memorial Scholarship	1,200
Katie, W.	Albert J and Adelaide Riker Scholarship	1,000
Emma, W.	William F. Renk Endowment for Undergraduate Excellence	1,000
Gabrielle, W.	William F. Renk Endowment for Undergraduate Excellence	1,000
Elizabeth, Z.	Ferdinand Plaenert New Freshman Excellence Award	1,200
Nicole, B.	Larry D. Satter AWA Scholarship	400
Nicole, B.	Dorothy Strong Scholarship	1,000
Dana, K.	Charles Eckburg Memorial Junior Award	3,000
Ashley, K.	Frank Barron Morrison Scholarship	1,000
Kathryn, R.	Daughters of Demeter/O.N. Allen Merit Scholarship	1,000
Rachel, W.	Robert and Janice Walton Scholarship in Animal Genetics	1,300
Rachel, W.	William F. Renk Endowment for Undergraduate Excellence	1,000
Kimberly, K.	W.D. Hoard Memorial Scholarship (Undergraduate)	750

Faculty	2013 Appointment Extension	Teaching	Research
Ralph Albrecht, Professor		30%	70%
Mark Berres, Assistant Professor		25%	75%
Jim Claus, Associate Professor		40%	60%
Mark Cook, Professor		34%	66%
Tom Crenshaw, Professor		50%	50%
Amin Fadl, Assistant Professor		35%	65%
Dan Gianola, Professor		12%	48%
Marion Greaser, Professor		20%	80%
Hasan Khatib, Associate Professor		35%	65%
Brian Kirkpatrick, Professor		40%	60%
John Parrish, Professor		40%	60%
Jess Reed, Professor		25%	50%
Mark Richards, Associate Professor		30%	70%
Guilherme Rosa, Associate Professor		35%	65%
Dan Schaefer, Professor	8%	52%	40%
Jeff Sindelar, Associate Professor	80%		20%
Dave Thomas, Professor	25%	30%	45%
Staff			
Steve Arp			100%
Terry Barry			30%
Jeff Booth		14%	86%
Dan Butz			100%
Joe Heintz			100%
Terry Jobsis		20%	80%
Ron Kean	70%	30%	
Chris Krueger			100%
Ricky Monson			100%
Jennifer Meudt			100%
Bernadette O'Rourke	90%	10%	
Joan Parrish			40%
Jamie Reichert		15%	85%
Ron Russell	10%	54%	36%
Liv Sandberg	80%	20%	
Deb Schneider			100%
Dhanu Shanmuganayagam			100%
Todd Taylor	10%	20%	70%
Robert Weyker		46%	54%

Departmental Administrative and Support Staff

Shelia Pink, Academic Department Manager
Kathy Monson, University Services Program Associate B
Minh Ngo, IS Tech. Srv. Prof.
Joan Parrish, Assoc. Admin. Program Specialist
Dianne Raschka, Financial Specialist 4
Deb Schneider, Sr. Research Specialist 3
Steve Switzer, IS Sys. Dev. Srv. Senior
Gail Tanner, Financial Specialist 2
Laura Trumble, University Services Associate 1

Staff at On and Off-Campus Research Centers

Dennis Anderson, (Arlington Beef Unit)
Steve Arp, (Arlington Beef Unit)
Jeff Booth (Arlington Swine)
Angel Gutierrez-Velin (Small Animal Lab)
Dawn Irish (Poultry Research Lab)
Terry Jobsis (Campus Operations)
John Kemper (Campus Operations)
Jamie Reichert, (Arlington Swine Unit)
Derald Stronach (Arlington Sheep Unit)
Todd Taylor, (Arlington Sheep Unit)
Sam Trace (Arlingtong Swine Unit)
Kim Trumble (Livestock Lab)

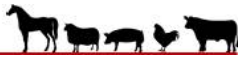
Affiliated Faculty

Steve Ingham, Professor, Food Science
Charles Kaspar, Associate Professor, Nat. Resources-Environmental Toxicology
Food Microbiology & Toxicology

Adjunct Faculty

Andy Milkowski

Agronomy		
Beissinger, Tim	PhD	Gianola
Animal Biology, Immunity and Toxicology		
Fikrulla, Kisa	PhD	Albrecht
Meyer, Daryl	PhD	Albrecht
O'Reilly, Nora	PhD	Albrecht
Zuehlke, Andrew	PhD	Albrecht
Bacteriology		
Shippy, Daniel	PhD	Fadl
Beef Cattle		
Schaefer, Mitch	MS	Schaefer
Wagner, Dana	MS	Schaefer
Dairy Science		
Abdalla, Emhimad	PhD	Rosa
Morota, Gota	MS	Gianola
Penagaricano, Francisco	PhD	Rosa
Electronic Animal Identification		
Danijarsa, Mohamad "Dani"	PhD	Schaefer
Food Science		
Feliciano, Rodrigo	PhD	Reed
Shere, Matt	MS	Kaspar
Genetics-Animal Breeding		
Duan, Huihui	PhD	Gianola/Rosa
Hu, Yaodong	PhD	Gianola
Kamalludin, Mamat	PhD	Kirkpatrick
Kropp, Jenna	MS	Khatib
Murphy, Thomas	PhD	Thomas
Tang, Weijing	PhD	Rosa
Zare, Yalda	PhD	Kirkpatrick
Genetics-Populations		
Cassini, Andrew	PhD	Berres
Hayes, Matt	PhD	Berres
Nguyen, Hoa	PhD	Berres



Meat Science Muscle Biology

Du, Chen	MS	Claus
Grunwald, Eric	PhD	Richards
King, Amanda	PhD	Sindelar
Perez, Dale	PhD	Richards
Sawyer, Chris	MS	Claus
Shazer, William	MS	Sindelar
Tatiyaborworntham, Nantawat	PhD	Richards
Weyker, Robert	MS	Claus & Sindelar

Molecular & Environmental Tocixology

Olsen, Jake	PhD	Cook

Nutrition

Bobeck, Elizabeth	PhD	Cook
Pierre, Joseph	PhD	Reed
Rortvedt, Laura	PhD	Crenshaw

Pharmaceutical Science

Simmons, Ken	PhD	Albrecht

Reproductive Physiology

Gibbs, Katie	MS	Parrish
Schindler, Josh	MS	Parrish
Yagoda, Kylie	MS	Parrish

Ron Kean

Teaching

Animal Sciences 200 Biology & Appreciation of Companion Animals
Animal Sciences 511 Breeder Flock & Hatchery Management
Advise 26 undergraduate
Poultry Science club advisor – Club completed Spring processed meats sale and Fall turkey sale.
Accompanied 6 students to Atlanta for the International Poultry Expo in January. Club participated in CALS Day for Kids, etc.
TA hired to respond to academic achievement gap, 1/3 time TA-ship. TA is to help with possible causes and/or concerns associated with achievement gap

Extension

4-H Avian Quiz Bowl – 10 teams competed. Senior winners placed 6th place at national contest.
FFA Poultry CDE – 37 teams, 133 students competed.
FFA poultry CDE practice round in Belleville.
WI Junior Poultry Assn. Day on Campus – Lou Arrington.
Hatching eggs for preschools and elementary schools – worked with approx. 35 teachers (some do multiple rooms).
Tours of Poultry Research Lab – several groups of youth, FFA classes, etc. toured.

Backyard/Urban Poultry Growers Support

Several talks to master gardener's groups, urban poultry groups, etc.
Webinar for Iowa State University's Rural Landowner's group
Worked with several city groups trying to legalize urban chickens in their cities.
Involved with some hobby clubs in the state.
Co-leader of the Small Farms Extension Team.
Write a question and answer column for Backyard Poultry magazine. It is published 6 times per year, and has a circulation over 75,000 per issue. Along with this, I answer many questions that come by email or letter to the magazine.

Commercial Industry Support

Assisted with Poultry Health School, held in Madison in 2012.
Met with group of Amish producers about ventilation issues.
Assisted with WI Poultry & Egg Industries Assn. meeting.
Chaired the Turkey Grower Workshop educational session at the Midwest Poultry Federation Convention in St. Paul, MN.
On two awards committees for the Poultry Science Assn. – American Historical Society award and Poultry Science Student Recruitment awards.
Member of the Livestock Extension team

Bernie O'Rourke

Teaching

Animal Sciences 150 Career Orientation

Committees:

Ag Issues Youth team
Awards Committee Member – WI 4-H youth development association board
Professional Development member
Livestock Team
National Quiz Bowl Contest Committee
National Skillathon Contest Committee

Bernie O'Rourke

Committees Con't:
National Pork Board Youth Committee
World Beef Expo
Wisconsin Livestock Breeders Association
Wisconsin Pork Association Youth Committee
Youth Mentorship, Youth Scholarships, PRRS task force
John Shutske committee
Animal Sciences Extension Group Chair
CALS recruitment committee
UW Extension Swine Team

Accomplishments & Grants:
NELD – National Extension Leadership Development Conference
Distinguished Service Award – Wisconsin Association of Extension 4-H youth development specialists (WAE4-HYDP)
Excellence in Animal Sciences - Wisconsin Association of Extension 4-H youth development specialists (WAE4-HYDP), "Ag Truths not Tails"
WI 4-H Foundation grant

Events:
Ag Truths Not Tails Conference
4-H Meats Judging Contest/Triatholon
Badger Judging Livestock Judging Camp
Quiz Bowl & Skillathon Contest
Meat Animal Wislines
MAQA trainings
WLBA annual meeting
FFA Meats Judging Contest
FFA Livestock Judging Contest
FFA state convention
4-H Conference workshop - Speak out for agriculture.
Southern district meeting - Presented our approach for the MAQA survey for feedback and input.
AASD – Area Animal Science Days
WI State Fair Premier Exhibitor Contest
State 4-H Livestock Judging Contest
National Skillathon contest
Wisconsin Sheep & Wool Festival
Arlington sheep day
World Beef Expo
WPA symposium
National 4-H Agents conference – Florida

Other:
Saddle and Sirloin Advisor
4-H foundation
Federal report featured MAQA
MAEC (Meat Animal Evaluation Contest)
Student Recruitment - Visit days, perspective student visits
305 class field trips with students

Bernie O'Rourke

Other Con't.

COOL – Country of Origin Labeling programming
AQ Quiz Bowl
Publications writer search committee
Wislines for 4-H and Ag agents and livestock on maqa, COOL
UW Madison Sheep sale committee/class
Dept. Scholarships
Extension specialist blogs
Worked with national skillathon team
Sheep festival sweepstakes contest
Youtube videos on events – livestock, meats, quiz bowl, skillathon.
Rank ultrasound data and do carcass shows for a number of counties.
Took classes on filemaker pro, photoshop and indesign to be more proficient.
NELD book club on leadership topics

J. Liv Sandberg

Teaching

Animal Sciences 375 Equine Business & Management
Animal Sciences 101 Livestock Production , Guest Lecturer
Animal Sciences 200 Biology and Appreciation of Companion Animals, Guest Lecturer
Animal Sciences 150 Career Orientation in Animal/Poultry Sciences, Guest Lecturer

Undergraduate/Graduate mentor activities.

AWA Breakfast on the Farm interactions
DELTA Graduate student project with ANS 375 course
SOAR & visit day groups
AQ Horse lab
Advise ~15- 18 undergraduate students.

Extension

4-H State Horse Bowl, Hippology, Public Speaking & Demo Presentation contests
4-H Horse Association Intern
4-H Horse Association Youth Leadership Conference
4-H State Horse and Pony Expo & 4-H State Gymkhana Contest
Area Animal Science Days
FFA State Equine Evaluation Contest
WI state Horse council Judges Certification
WI Officer Humane Training
Bi-State Equine Nutrition workshop
Equine Biosecurity Presentations
NAILE Hippology Contest (North American International Livestock Expo)

Service and Awards

UW CASI committee member
UW CALS Curriculum committee (ex officio)
YIA (Helping Youth Understand Agriculture) team
Livestock team co leader
AYHC (American Youth Horse Council) board member
Hoofer Equestrian Center review planning board

Mark Berres
2013 Spitzer Excellence in Teaching Award.
The Spitzer Teaching Award recognizes an individual who has advanced CALS teaching goals for undergraduate or graduate students through outstanding teaching practices, the scholarship of teaching and learning or other beyond-the-classroom accomplishments that have shaped teaching practices of others instructors or students' learning experience.

Mark Cook
2013 Jung Excellence in Teaching Award
The Jung Excellence in Teaching Award has been sponsored by Jung Seed Genetics, Inc., of Randolph, Wisconsin, since 1967. The Jung Teaching Award recognizes leadership in teaching. "The recipient should be an individual who exemplifies [the] qualities of an excellent teacher, demonstrating competence in teaching through motivation of students, through the utilization of innovations in teaching, by maintaining effective communication with students, and by contributing to the various instructional programs and activities of the college." In addition, "the recipient should be one who possesses outstanding intellectual attainment and be held in high regard by professional colleagues."

WARF Innovation Award in Life Science. One of two award selected from 300 inventions disclosures to WARF. The other award was in physical sciences. The disclosure awarded was for discovery of an oral antibody to interleukin-10 that prevents protozoan infections.

Tom Crenshaw
2012 WALSAA 40 in 40 Impact Award- 2012
In celebration of its 40th anniversary, the Wisconsin Agricultural and Life Sciences Alumni Association honored 40 individuals who have made a difference not only for WALSAA, CALS and the Farm and Industry Short Course, but also farms, classrooms, laboratories, businesses and other organizations in Wisconsin.

2013 J.S. Donald Short Course Teaching Award

Dan Gianola
Sewall Wright Professor of Animal Breeding and Genetics at CALS, received an honorary doctorate degree from Iowa State University.

Guilherme Rosa
2013 Pound Research Award
Given to honor an outstanding young CALS research scientist and to promote continued excellence in research.

Dave Thomas
2013 Robert G.F. and Hazel T. Spitze Land Grant Faculty Award for Excellence. Given to faculty who exemplify the Land Grant philosophy through combined excellence in research, teaching, and outreach. The purpose of this award is to reward comprehensive scholarly performance over a sustained period of time. Such performance shall include all areas of academic responsibility unique to the Land Grant mission including teaching and advising, research and publication, outreach/extension and public service, and participation in professional organizations and faculty governance.

Albrecht, Ralph

UW-Madison/UW-Milwaukee Intercampus Chancellors' Research Incentive Grants Program, (Oliver-UW Milwaukee and Albrecht -UW Madison CoPIs) 7/1/10 - 6/30/11, "Synthesis and Atomic Characterization of Iron-Oxide-Gold Core-Shell Nanoparticles and Their Use in Cell-Targeted Therapies" $50,000 direct

NIH-NIAID (Talaat PI, Albrecht CoI) 6/1/09 - 5/31/11, "Elemental Imaging of M. Tuberculosis During Infection" $206,000 direct

NSF (Nealey PI -- Albrecht CoI) 9/1/09 - 8/31/14, NSEC " Templated Synthesis and Analysis at the Nanoscale" $701,595 direct"

Berres, Mark

Initial evaluation of the status of Hermes Copper (*Lycaena hermes*) on conserved lands in San Diego County: Landscape Genetics [PI=Deutschman; subcontract awarded to Berres; 3rd yr. renewal for $15,000

Functional genetic analysis of avian *Mx* response to highly pathogenic avian influenza in the Domestic Chicken [PI=Berres; 3 yr. duration, $124,854; Program: Hatch; Funding began Oct 2011]

Assessment of avian influenza and genetic endangerment of the family Phasianidae in Vietnam. [International cooperation; 2 yr duration, $10,000 per year; Rufford Foundation, Great Britain. My student Hoa and I wrote this proposal and submitted it through a collaborator at Ho Chi Minh University. This was done because Rufford does not generally fund investigators based in the US.]

Claus, James

Claus, J.R. 2012. Inhibition of Lipid Oxidation in Turkey Meat by Encapsulated Phosphates. HATCH approved 12/23/11 (one year; $37,479).

Claus, J.R. 2012. Nitrite-embedded packaging film effects on beef color development and stability as influenced by meat age and muscle type. Wisconsin Beef Council ($5,550; 1 year).

Claus, J.R. 2012. Understanding the efficacy of Nu-Tek Salt in various meat and poultry products ($145,414; August 2012– March 2014). Hired Post-doctorate, Dr. Jing Zhao (University of Kentucky) to support this research.

Taylor, R. and Claus, J.R. 2012. Hydrogen peroxide project. Cargill-Benevenga Fund ($300 lab support).

Submitted

Claus, J. R., 2012. Enhancing color shelf life of fresh tuna. Proposal to Norpac Fisheries Export. Sponsor has communicated desire to fund ($35,443). However in discussions with UW and WARF on wording in contract. Pending.

Cook, Mark

WARF royalties. Award amount variable.

UW-Madison Innovation and Economic Development Research Program. Cook (Co-I, Butz PI) 7/12-6/13 (101-PRJ59ZQ-4) Continuous Breath Analysis for Early Detection of Sepsis.

Graduate School- Draper TIF. Cook (PI) 7/11-6/2012. (135-PRJ48WV-4) The use of antibodies to sPLA2 to inhibit septic shock in a mouse model of sepsis. $50,000K.

Cook, M.E. D.E. Butz, and F. Assadi-Porter. 2009 (year written). A comparative study of the anti-inflammatory effects of c9, t11-conjugated linoleic acid and the cyclooxygenase-2 inhibitor Celecoxib in a mouse model of arthritis. Hatch.. $123,583. Funded. Project 10/10-9/14.

Cook, M.E. *Interior, US Geological survey.* (Gross, PI, Cook, subcontract). 9/11-8/12 (144-PRJ53JF-4) Effects of conjugated linoleic acid on lake trout reproduction and fatty acid deposition

MIU Teaching Assistantship. Awarded for Animal Sciences 101. Second year funded. Funding has been extended to fall 2012. Funding renewed 2013.

Draper-TIF. Cook (PI). 7/1/2012-6/30-2013. Vaccine to FGF-23 reduces dietary requirements for phosphate.

Cook, M.E. 2012. Discovery of novel swine by-products. Smithfield Food. June 1-Nov 30, 2012. $66,000, Phase 1. Phase 2 for $400K was funded starting Jan 1 2013.

Crenshaw, Thomas

Project Fund Descr Sponsor 2012 $ received PRJ22CQ 133 Corn coproducts WI Corn Board 12,000/y 3.5 y 072700 Crenshaw

PRJ54TI 133 FH Swine Cardiovascular Research Foundation, 072700 Krueger\Crenshaw, Shanmuganayagam

PRJ42HD 136 Swine Lab $74,829 072700 Crenshaw

PRJ52UR 142 Yr 1-Hatch $33,751 9 mo 072700 Crenshaw

PRJ52US 142 Yr 2-Hatch $10,388 3 mo 072700 Crenshaw

233Q893 233 SWINE RES MULTIPLE DONORS $41,000 072700 Crenshaw

233GH34 233 Undergraduate research Cargill/Benevenga $2,000 072700 Crenshaw

PRJ27CJ 136 Swine sales $19,989 072700 Crenshaw and Reed

Fadl, Amin

Phenotypic and virulence traits of a methyl-transferase mutant of *Salmonella*, UW-graduate school, 10/3/2012.

Regulation of *Salmonella* virulence by RNA modification enzyme GidA. Military Infectious DiseaseResearch Program (MIDRP)/DOD, pre-proposal.

Gianola, Daniel

AFRI-USDA *Genome-assisted methods for prediction of genetic merit and performance of livestock under non-additive inheritance.* $430,000 [This was a resubmission. In the first iteration, the proposal was rated as "High priority" but was not funded; in the second, it was downgraded to "Medium priority"]. Decision pending.

Hatch - *Statistical Methods for Prediction of Across-population Performance in Livestock Breeding*. Funded (~$118,000, approximately)

GENUS/PIC, De Forest, Wisconsin. *Unrestricted gift for research in prediction of crossbred performance using genomic data.* $65,000 Funded. Decision on another renewal pending.

NEOGEN (Former - MERIAL/IGENITY, Duluth, Georgia. Grant to UW Foundation for research in quantitative genomics [with Kent Weigel]. $65,000 Funded.

Greaser, Marion

NIH Titin's Splicing Mechanisms and Physical Implications Co-Investigators: R.L. Moss, M. Gotthardt (Berlin) Discovery and characterization of a mutation in a gene that causes human dilated cardiomyopathy.

Hatch Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation, M.L. Greaser, P.I., $25,675 annual. Co-Investigators: Colin Dewey. Determination of the mechanism of action of Rbm20, an RNA splicing factor.

My-BP-C Modulation of Cardiac Contraction, R.L. Moss, P.I. Co-Investigators: M.L. Greaser. Actin binding to My-BP-C fragments

USDA, NATL INSTITUTE FOOD & AGRICULTURE Teaching and Learning in the Animal Sciences A National Effort to Challenge Assumptions and ESTABLISH New Foundations for the 21st Century $140,153 9/2011- 8/2014 Wattiaux/ Khatib/Thomas

Khatib, Hasan

USDA/AFRI Animal Epigenetics and Reproduction Workshop: Plant and Animal Genome XXI Conference $33,400 01/2013- 01/2014 Khatib/Imumorin (Cornell)

USDA/AFRI Physical Reference Maps for Bovine Genome Assembly $500,000 01/2012- 12/2014 Schwartz/ Khatib/ Kirkpatrick/ Weigel

Graduate School, UW Conference Travel Award (Phoenix, AZ) $1,000 02/2012- 07/2012 Khatib

HATCH- CALS The Genetic Architecture of Milk Proteins $90,156 10/2011- 09/2013 Khatib/Lucey/Weigel

NorthWest A&F University, Yangling, China. The molecular mechanism of FGF2 gene affecting reproductive traits in dairy cattle $6,500 (40,000 RMB) 11/2010- 04/2012 Wang (China)/Khatib

HATCH-CALS The effects of imprinted genes on maternal behavior and early embryonic lethality in cattle $117,063 10/08- 09/12 Khatib

Genex Cooperative, Inc. Shawano, WI, USA. Seen samples from high and low fertility bulls $3,500 2012 Khatib

NIH-AFRI Effects of sperm epigenomic and transcriptomic signatures on male fertility and embryo development in cattle $1,030,579 H. Khatib/S. Brody (Washington University)/T. Ferkol (Washington university)

USDA-AFRI The impact of maternal protein intake on epigenetic modifications and subsequent postnatal adipose tissue deposition in progeny $499,927 H. Khatib/A. Bridges (University of Minnesota)/ A. Radunz (UW-River Falls)

USDA-AFRI Atlas of imprinted genes in cattle $491,964 H. Khatib

Pakistan-US Science and Technology Cooperation Program 2012 The Identification of Genetic Factors for Improvement of Fertility and Prolificacy in Beetal Goat of Pakistan $ 725,438 H. Khatib/M. Babar

Kirkpatrick, Brian

USDA-NIFA, Improving genetic resistance of cattle to Johne's disease, funded, $3,000,000 total, $1,126,217 to UW

Across-breed comparison of genomics of host susceptibility to infection by *Mycobacterium avium* subsp. *Paratuberculosis* Co-Investigators: G. Shook and M. Collins. Little evidence for common genomic regions associated with paratuberculosis susceptibility across breeds, animals positive for infection tend to cluster by birth date

Physical reference maps for bovine genome assembly Co-Investigators: David Schwartz, PI; K. Weigel, H. Khatib and B. Kirkpatrick co-PIs.

Kirkpatrick, Brian (con't)

Genotypic dissection of canine non-contact cruciate rupture. Co-Investigators: P. Muir, PI; B. Kirkpatrick and B. Yandell co-PIs.

Hatch -- Validation and fine-mapping of bovine twinning rate QTL. Twinning rate QTL on bovine chromosomes 5 and 14 were validated and additional markers in high linkage disequilibrium with the QTL were developed. A major gene for ovulation rate was confirmed and mapped to a 2 Mb genomic region. Positional candidate gene analysis and comprehensive screening of the 2 Mb genomic region were initiated.

Hatch -- Genomic and proteomic examination of a major gene for bovine ovulation rate. Positional candidate gene analysis was broadened, leading to the exclusion of one positional candidate and narrowing of the candidate gene region to ~1.5 Mb.

Parrish, John

Funding for Research in 2012:
Hatch $165,040 2012 – 2015 Understanding and controlling male fertility in swine.

Semex USA $2000 2012 Fee for service – Semen analysis.

ReproQuest $2,500 2012 Gift to support reproductive research of John Parrish.

Hanor Inc. semen 2012 Semen from all boars collected at Spring Green facility from June – Nov. 15, 2012 to evaluate effects of summer heat stress, 1205 samples.

Hanor Inc. $11,500 2012 Donation of a Beckman Coulter Allegra X-12R refrigerated centrifuge with carriers for use in cryopreservation of boar semen.

Funding for Teaching in 2012:
UW-Teaching Improvement $38,482 2011-2012 Teaching improvements to the old dairy barn.

UW-Undergraduate Initiative Funds $18,050 2011-2012 Breeding simulation equipment.

UW-MIU-TA $8,000 2012 TA for fall semester in AS434.

Lab Modernization $51,389 2012 Remodeling of room 134 to create Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP).

ABS Global 2012 200 units of frozen semen for use in AS434 teaching (value=$1000).

Equine Courses $2,400 2012 Teaching adults stallion and mare management, and freezing of equine semen.

Reed, Jess

Cardiovascular Research Institute, 6/1/2011-5/31/2014, *Development of the Familial Hypercholesterolemic (FH) swine as a translational model for cardiovascular device and imaging research,* Role: PI.

Hatch Formula Act Funds, 10/1/2010-9/31/2014, *Cranberry proanthocyanidins as inhibitors of epithelial cell invasion by entheropathogenic and uropathogenic E. coli strains,* Role: PI.

Cranberry Institute, 5/1/2012-4/30/2013, *Cranberry Polyphenols and Gut Health: Integrated Cranberry Health Research at UW-Madison,* Role: PI

Johnsonville Sausage, LLC, 7/01/2012 – 6/30/2013, Extraction and Characterization of Antimicrobial Proteins and Peptides from Animal By-Products, Role: CoI.

UW-Madison, TIF, 7/1/2012 – 6/30/2013, Addition of Tannin Formulation to Enteral Nutrition to Counteract Impairment of or Improve Immune Function, Role: CoI

USDA OREI, 9/1/2012 – 8/31/2016, Forage-Based Parasite Control in Sheep and Goats in the Northeast US, Role: CoI.

Pending:
USDA AFRI, 9/1/2013-8/30/2015, Preventing Inflammation Through Diet: Investigating the Role and Mechanism of Action of Plant-Derived Bioactive Components, Role: CoI

Richards, Mark

USDA- National Research Initiative Competitive Grants Program. Mechanistic bases for the reciprocal interaction between lipid oxidation and myoglobin redox stability. 9/1/07-2/28/2012 (Co-PI) $300,000

USDA-Hatch award. Enhancing tocopherol deposition in turkey muscle and other strategies to inhibit oxidative deterioration (PI). October 1, 2009 – September 30, 2013 (PI) $106, 453

USDA- Post Doctoral Fellowship Program. Determining the primary mechanism of discoloration and lipid oxidation in different meat products. 8/15/2012-8/14/2014 (Advisor to recipient). Funding $111,235

Kraft-Oscar Mayer. Antioxidant evaluation and literature review of antioxidants for use in processed meats. 11/14/2012-2/13/2014 (PI). $80,834

Rosa, Guilherme

Pinedo, P., Bicalho, R. C., Galvão, K., Chebel, R. C., Ealy, A., Gilbert, R. O., Rodriguez-Zas, S. L., Rosa, G. J. M., Santos, J. E. P., Seabury, C., Schuenemann, G. M. and Thatcher, W. Genomic selection for improved fertility of dairy cows with emphasis on cyclicity and pregnancy. USDA-AFRI Translational Genomics for Improved Fertility of Animals, 01/13-12/16, $2,977,638. (Funded)

Rosa, G. J. M. and Thomas, D. L. Exploring causal relationships underlying economically important traits in dairy sheep, HATCH-CALS, 09/13-09/17, $166,312. (Funded)

Rosa, G. J. M., Wu X.-L., Gianola, D. and Weigel, K. A. Inferring Causal Phenotype Networks in Livestock Using Genomic Information, USDA-AFRI Grant no. 2011-67015-30219, 03/11-02/15, $467,290.

Rosa, G. J. M. Causal Inference in Agricultural Sciences and Its Implications on the Genetic Improvement and Management of Livestock Vilas Associate Competition, UW Grad School, June 2010-June 2012, $75,936

Weigel, K., Rosa, G. J. M., et al. Preparing Research and Development Professionals for Careers in Agricultural Genomics, USDA-SERD, Jan 2010-Dec 2014, $118,000.

Cheng, H. H., Muir, W. M., Rosa, G. J. M., Wong, G. K., Groenen, M. A., Crooijmans, R. P., Megens, H. J., Vignal, A., Paszek, A. A., Okimoto, R., Albers, G. A. and Vereijken, A. L. Development and Field Evaluation of Genome-Wide Marker-Assisted Selection (GWMAS) Over Multiple Generations in Commercial Poultry, USDA-AFRI, Sept 2009-Aug 2013, $2,500,000.

Rosa, G. J. M. Development of Efficient Design and Statistical Analysis Strategies for Genome-Wide Association Studies in Livestock, USDA-HATCH, Sept 2009-Sept 2013, $146,344.

Schaefer, Dan

CALS Hatch, Pasture-Finishing Systems for the Upper Midwest: Strategic Supplementation and Utilization of Annual Forages, $66,605 2010-12.

UW Consortium for Extension and Research in Ag and Natural Resources, Behavior and Performance of Feedlot Cattle due to Flooring Surface, $49,340 2012-14.

Zilkha Biomass Energy, Efficacy of Rice Straw Product in Feedlot Cattle $30,422 1-6/2013.

CALS Hatch Climate Resilient Pasture Systems to Sustain High Quality Forage and Season Long Pasture Carrying Capacity $167,036 2014-16.

Sindelar, Jeff

Investigating the Development of Thermal Processing Tools to Improve the Safety of Ready-To-Eat Meat and Poultry Products. Jeffrey J. Sindelar (PI), Kathleen Glass (Co-PI, Food Research Institute) and Robert Hanson (Co-PI, Hanson Tech). American Meat Institute Foundation 4/1/13 to 3/31/15. $116,486. Submitted to sponsor.

Reducing Sodium Levels in Various Processed Meats by Using Natural Flavor Enhancer (NFE) and Soy Sauce (SS). Jeffrey J. Sindelar (PI) and Scott Rankin (Co-PI, Department of Food Science). Kikkoman Foods, Inc. 3/1/12 to 2/28/14. $197,258. Funded; research in progress.

Developing Validated Time-Temperature Thermal Processing Guidelines for Ready-To-Eat Deli Meat and Poultry Products. Jeffrey J. Sindelar (PI), Kathleen Glass (Co-PI, Food Research Institute) and Robert Hanson (Co-PI, Hanson Tech). American Meat Institute Foundation. 4/1/11 to 3/31/13. $97,200. Funded; research in progress. Two abstracts have been accepted for poster presentations at professional meetings.

Modeling the Effect of Natural Antimicrobials in RTE Meats. Jeffrey J. Sindelar (PI), Kathleen Glass (Co-PI, Food Research Institute). Purac. 1/1/11 to 12/30/12. $113,650. Funded; research in progress. Two abstracts have been accepted for poster presentations at professional meetings.

Integrated Research & Extension to Improve the Safety of Natural and Organic Processed Meats by Increasing the Antimicrobial Impact of Sodium Nitrite. Jeffrey J. Sindelar (PI) and Kathleen A. Glass (Co-PI, UW Food Research Institute). USDA/HATCH. 10/1/10 to 9/30/13. $92,810. Funded; research in progress. One abstract has been accepted for a poster presentation at a professional meeting.

Thomas, Dave

Teaching and Learning in the Animal Sciences - A National Effort to Challenge Assumptions and Establish New Foundations for the 21st Century. USDA/National Institute of Food and Agriculture. 9/1/2011- 8/31/2014. Michel Wattiaux, Dept. of Dairy Science (P.I.), David L. Thomas and Hasan Khatib, Dept. of Animal Sciences (Co-P.I.s). $140,153.

Dairy Goat Nutrition Trial. University of Wisconsin Consortium for Extesnion and Research in Agriculture and Natural Resources (CERANR). 7/1/2012- 6/30/2014. $11,160. Tera Mongomery, UW-Platteville (PI) and David L. Thomas, UW-Madison (Co-PI).

The effects of maternal dietary energy source during gestation on progeny growth, metabolism, body composition and reproductive performance in sheep. UW Consortium for Extension and Research in Agriculture and Natural Resources. 2010-12. 2010-11 = $27,061, 2011-12 = $28,121 I was a minor Co-PI. PI was Amy Radunz, major Co-PI was Justin Luther, UW-River Falls.

Genetic improvement of lamb survival. CALS, UW-Madison, Hatch project. 2011-2015. 2011-2012= $40,478, 2012-2013 = $40,716 Co-Investigators: I am the PI. Large breed differences exist for lamb survival in the flock at the Spooner Agricultural Research Station. Hybrid vigor of the lamb is very important in reducing lamb mortality.

Thomas, Dave (con't)

Small Ruminant Technical Services. Wisconsin Department of Agriculture, Trade, and Consumer Protection. 2011-12. $38,413. Co-Investigators: Claire Mikolayunas (partial support for her position), I was the official PI

Dairy Goat Nutrition Trial. University of Wisconsin Consortium for Extesnion and Research in Agriculture and Natural Resources (CERANR). 7/1/2012- 6/30/2014. $11,160. Co-Investigators: Tera Mongomery, UW-Platteville (PI) and David L. Thomas, UWMadison (Co-PI).

Albrecht, Ralph

Refereed publications:

Krystofiak, ES, EC Mattson, PM Voyles, CJ Hirschmugl, RM Albrecht, M Gajdardziska- Josifovska, JA Oliver. Core-shell structure of gold-coated magnetite nanoparticles is not necessary for biological functionalization and activity, Microscopy and Microanalysis, 2013.

Daniel C. Shippy, Joseph A. Heintz, , Ralph M. Albrecht, Nicholas M. Eakley, Amin A. Fadl. Deletion of glucose-inhibited division (gidA) gene alters the morphological and replication characteristics of Salmonella enterica Serovar typhimurium. Arch Microbiol Springer On line 11/23/11, Print version In Press 2012

Sarah K. Ward, Joseph A. Heintz, Ralph M. Albrecht, Adel M. Talaat. Single-Cell Elemental Analysis of Mycobacterium tuberculosis. Frontiers in Cellular and Infection Microbiology In Press

Simmons K, Albrecht R, Mecozzi S. Disadvantages of using hemolytic assays to test PEGylated polymers for complement activation during drug development. Submitted: Immunopharmacology and Immunotoxicology. 2012

Simmons K, Nejati E, Johnson R, Rejaei D, Pearce R, Albrecht R, Mecozzi S. "Enhanced allergic-type response to PEG-fluorocarbon polymer used for intravenous delivery of sevoflurane upon repeat injection in canines." Submitted. Int. J. NanoMed, 2012

Oliver, JA, DA Meyer, RM Albrecht. Simultaneous labeling of four surface receptors expressed on activated platelets and detection by conventional and energy filtering transmission electron microscopy. In preparation.

Book Chapters:

Albrecht, R.M., D.A. Meyer, and O.E. Olorundare. High Resolution Labeling for Correlative Microscopy In Scanning Electron Microscopy for the Life Sciences, H. Schatten ed. Cambridge University Press, In Press 2012

Abstracts:

Simmons K, Nejati E, Johnson R, Pearce R, Albrecht R, Mecozzi S. Investigation of hypersensitivity to PEGylated particles for use in drug delivery. Abstract submitted for presentation at the Experimental Biology Annual Conference 2012 (San Diego, CA April, 2012).

Berres, Mark

Accepted and submitted manuscripts in 2012:

Marschalek, D., Jesu, J. and M. E. Berres. 2012. Impact of non-lethal genetic sampling on the survival, longevity and behavior of the Hermes copper (Lycaena hermes) butterfly. Insect Conservation and Diversity. Status: Article first published online : 20 Feb 2013

Berres, M. E. Automatic identification of bird songs using dynamic linear programming algorithms. Status: In review, BMC Biology.

Berres, M. E. Hierarchically structured summaries of MCMC replicates performed in Geneland analyses. Status: submitted to Molecular Ecology

Matthew A. Hayes, Gary L. Ivey, J. Charles Palmer, Michael L. Casazza, Joseph P. Fleskes, Caroline P. Herziger, Bruce Dugger and ME. Berres. 2012. *Population genetic structure of Sandhill Cranes in the Pacific Flyway of western North America*. Status: Addressing initial reviewer comments.

DH Deutschman ME Berres, DA Marschalek and SL Strahm 2012. Three-Year Evaluation of Hermes Copper (Lycaena hermes) On Conserved Lands in San Diego County. San Diego Association of Governments. Status: 3rd and final published report.

Abstracts presented:

Berres, M. E. WeBIRD: Connecting people to birds through mobile technology. North American Ornithological Conference, Vancouver BC.

Hayes, Matthew; Ivey, Gary; Palmer, Charlie; Casazza, Michael; Fleskes, Joseph; Herziger, Caroline; Dugger, Bruce; Berres, M. E. Population genetic structure of sandhill cranes in the pacific flyway of western North America. North American Ornithological Conference, Vancouver BC.

Claus, Jim

Sickler, M.L. Claus, J.R., Marriott, N.G., Eigel, W.E., & Wang, H. Antioxidative effects of encapsulated sodium tripolyphosphate and encapsulated sodium acid pyrophosphate in ground beef patties cooked immediately after antioxidant incorporation. *Meat Science*. Submitted 2013

Cook, Mark

Peer-reviewed Papers, and Book Chapters:

Bobeck, E.A., K.M. Meyer, C. Helvig, M. Petkovick, and M.E. Cook. 2013. Sevelamer hydrochloride binds phosphate released from phytate in chicks fed 1α-hydroxycholecalciferol. J. Renal Nutr. 23:21-27. Previously reported as in press.

Liu, Y.Q., C.R. Davis, S.T. Schmaelzle, T. Rocheford, M.E. Cook, and S.A. Tanumihardjo. 2012. B-Cryptoxanthin biofortified maize (*Zea Mays*) increases Bcryptoxanthin concentration and enhances the color of chicken egg yolks. Poultry Sci. 91:432-438. Previously listed as in press.

Bobeck, E.A., K.S. Burgress, T.R. Jarmes, M.L. Piccione, and M.E. Cook. 2012. Maternally-derived antibody to fibroblast growth factor-23 reduced dietary phosphate requirements in growing chicks. Biochen. Biophys. Res. Commun. 420:666-670.

Cook, M.E. 2012. Fatty acids in immune health. In: Fats and Fatty Acids in Poultry Nutrition and Health. Eds., G. Cherian, R. Poureslami. Nottingham University Press. Published and available on Amazon. Previously listed as in press.

Kruger-Higby, L., R. Brown, M. Rassette, M. Behr, O. Okwumabua, M. Cook, C. Bell, M. Flowers, J. Ntambi, A. Gendron. 2012. Ulcerative Dermatitis in C57BL/6 mice lacking stearoyl CoA desaturase 1. Comp. Med. 62:257-263. Previously listed as under review.

Fadl, A.A., M.E. Cook. 2013 Animal genetics and welfare. In: Animal Genetics. Ed H. Khatib. Etext. In press.

Papers Submitted:

Rehl, J.M., D.C. Shippy, N.M. Eakley, M.D. Brevik, J.M. Sand, M.E. Cook, and A.A. Fadl. 2012. GidA expression in *Salmonella* is up-regulated under certain environmental conditions. FEMS Micro. Submitted.

Shahzad, M.M.K., Y. Liu, M.Felder, K. Ludwig, H.R. Van Galder, M.L. Anderson, J. Kim, M. S. Jamal, M.E. Cook, A.K. Kapur, and M.S. Patankar. 2012. Trans 10, cis12 conjugated linoleic acid inhibits proliferation and migration of ovarian cancer cells by inducing ER stress, autophagy, and by modulating Src. J. Bio. Chem. Submitted.

Boriosi, J.P., D.G. Maki, R. A. Yngsdal-Krenz, E.R. Wald, W. P. Porter, M.E. Cook, and D.E. Butz. 2012. Breath carbon isotope delta value may be a biomarker of acute phase response in mechanically ventilated pediatric patients. Ped. Crtical. Care. Med. Submitted.

Abstracts:

Sand JM, Hidayati S, Repasy A, Cook ME, 2012. Oral antibody to interleukin-10 prevents growth suppression by coccidia infection. Poult Sci, 91 E Supp-1.

Bobeck, E.A., K. Burgess. T. Jarmes, M.L. Piccione, and M.E. Cook. 2012. FGF-23 neutralization through vaccination reduced phosphate requirements of chickens. Poult. Sci 91: Suppl. 1.

Cook, M.E. 2012. Dietary CLA reduces clinical signs of acute and chronic inflammatory disease. Am Chem. Society Meeting. Spencer Award Symposia. Philadelphia, PA. AGFD 111.

Cook, M.E., D.E. Butz, W.P. Porter, and J. Boriosi. 2012. A novel breath biomarker for the detection of the onset of infection that leads to shock. Wisconsin Science & Technology Symposia. July 23-24. Marshfield, WI.

Crenshaw, Thomas

Peer-reviewed manuscripts and book chapters:

Tetrick, M.A., T.D. Crenshaw and N.J. Benevenga. 2012. Octanoate and nonaoate oxidation increases with age but not age related body weight in triceps brachii and gracilis muscle strips from newborn and two-day-old piglets. J Nutr. 142:999-1003.

Rortvedt, L.A. and T.D. Crenshaw. 2012. Expression of kyphosis in young pigs is altered by vitamin D supplementation of maternal diets. J. Anim. Sci. (Online http://www.journalofanimalscience.org/content/early/2012/10/16/jas.2012-5173.1

Manuscripts accepted/in press:

Crenshaw,T.D., D.K. Schneider, C.S. Carlson, J. B. Parker, J.P. Sonderman, T.L. Ward, M.E. Wilson. 2012. Mineral concentrations in tissues and lesions of osteochondrosis in bones collected from prolific sows across parities 0 through 7. J. Anim. Sci. (Accepted 12/03/12).

Sutchin R Patel, Kristina L Penniston, Thomas D Crenshaw, Stephen Y Nakada. 2012. Dietary Hydroxyproline Induces Nephrolithiasis in the Adult Porcine Model. J. Urology (submitted 12_10_2012).

Abstracts presented at scientific meetings:

Crenshaw, T. D. and L. A. Rortvedt. 2012. Vitamin D deficiency in pigs - Fad, Fiction, and Facts. J. Anim. Sci. 90 (e-Suppl. 2):1.168.

Rortvedt, L. A. P. M. Cline, C. Ryer, B. Frederick, K. J. Retallick, D. K. Schneider, and T. D. Crenshaw. 2012. An oral dose of vitamin D at birth increased serum 25-OH D at weaning but failed to alter bone mineral density in pigs. J. Anim. Sci. 90 (e-Suppl. 2):115.

Badioo, S. K., Q. Yang, G. He, T. D. Crenshaw, C. L. Wyatt, and J. A. Jendza. 2012. Influence of dietary Quantum phytase on bone strength and bone phosphorus contents of weaned pigs. J. Amin. Sci. 90 (e-Suppl. 3):65.

Neupane, S., M. L. Hoffman, M. A. Rokosa, E. Ackell, D. Kaelin, S. A Zinn, T. D. Crenshaw, K. E. Govoni. 2012. Effect of intrauterine growth retardation due to poor maternal nutrition on bone formation in sheep. J. Anim. Sci. 90 (e-Suppl. 3):178-179.

Cromwell, G. L., M. J. Azain, O. Adeola, S. K. Baidoo, S. D. Carter, T. D. Crenshaw, G. M. Hill, P. S. Miller, J. F. Patience, M. C. Shannon, H. H. Stein; NCCC-42 Committee on Swine Nutrition. 2012. Withdrawal patterns of DDGS on performance, belly firmness, and fatty acids in pigs A cooperative study. J. Anim. Sci. 90 (e-Suppl. 3):467-468.

Rortvedt, L. A., D. K. Schneider, and T. D. Crenshaw. 2012. Bone ash and strength traits of young pigs fed diets with no supplemental vitamin D were compromised within a four-week trial. J. Anim. Sci. 90 (e-Suppl. 3):564.

Merkatoris, P. T., L. A. Rortvedt, and T. D. Crenshaw. 2012. Estimates of relative bioavailability of monocalcium and dicalcium phosphates based on whole body DXA scans to determine the efficiency of dietary P use by growing pigs. J. Anim. Sci. 90 (e-Suppl. 3):565.

Sivalingam, S., Patel, S.R., K.L. Penniston, T.D. Crenshaw, and S.Y. Nakada. 2012. Dietary hydroxyproline induces nephrolithiasis in the adult porcine model. J Endourol. 26:(Suppl 1) A12-A13.

Fadl, Amin

Abstracts:

Role of tRNA Modification Enzyme GidA in Attenuation of *Salmonella* Virulence. The 93rd Annual Meeting of Conference of Research Workers on Animal Diseases (CRWAD), December 1-4, 2012, Chicago, IL.

Rehl, J. M., N. M. Eakley, M. Brevik and A. A. Fadl. Gene Expression of the Glucose-Inhibited Division (*gidAB*) Operon in *Salmonella* is Influenced by the level of AsnC and Different Environmental Conditions. The 112th General Meeting, American society for microbiology, June 16-19, 2012, San Francisco, CA.

Shippy, D. C., N. M. Eakley, C. T. Lauhon, P. N. Bochsler and A. A. Fadl. Virulence Characteristics of *Salmonella* Following Deletion of the tRNA Modification Enzymes GidA and MnmE. The 112th General Meeting, American society for microbiology, June 16-19, 2012, San Francisco, CA.

Peer-reviewed publications:

Shippy, D. C. and A. A. Fadl. 2012. Immunological characterization of a *gidA* mutant strain of *Salmonella* for potential use in a live-attenuated vaccine. *BMC Microbiology*, 12: 286.

Shippy, D. C., N. M. Eakley, C. T. Lauhon, P. N. Bochsler and A. A. Fadl. Virulence characteristics of *Salmonella* following deletion of genes encoding for the tRNA modification enzymes GidA and MnmE. *Microbial Pathogenesis*. (In press).

Rehl, J. M., D. C. Shippy, N. M. Eakley, M. D. Brevik, J. M. Sand, M. E. Cook and A. A. Fadl. GidA expression in *Salmonella* is modulated under certain environmental conditions. *Current Microbiology*, (In review).

Book chapter

A.A. Fadl and M.E. Cook. 2013. Animal Genetics and Welfare. In H. Khatib (ed), *Molecular and Quantitative Animal Genetics*, N.Y. Wily-Blackwell (submitted).

Gianola, Daniel

M. Angeles Pérez-Cabal, Ana I. Vazquez, Daniel Gianola, Guilherme J.M. Rosa and Kent A. Weigel. 2012. Accuracy of genome-enabled prediction in a daiy cattle population using different cross-validation layouts. Frontiers in Livestock Genomics 3, 1-7.

G. Morota, B.D. Valente, G.J.M. Rosa, K.A. Weigel and D. Gianola. 2012. An assessment of linkage disequilibrium in Holstein cattle using a Bayesian network. Journal of Animal Breeding and Genetics 129, 474-487.

J. M. González-Camacho, G. de los Campos, P. Pérez, D. Gianola, J. E. Cairns, G. Mahuku, R. Babu and J. Crossa. 2012. Genome-enabled prediction of genetic values using radial basis Function neural networks. Theoretical and Applied Genetics 125, 759-771.

A. A. Boligon, N. Long, L. G. Albuquerque, K. A. Weigel, D. Gianola and G. J. M. Rosa. 2012 Comparison of selective genotyping strategies for prediction of breeding values in a population undergoing selection. Journal of Animal Science doi:10.2527/jas.2011-4857.

Vazquez, A. I., G. de los Campos, Y. C. Klimentidis, G. J. M. Rosa, D. Gianola ,N.Yi, and D. B. Allison. 2012. A comprehensive genetic approach for improving prediction of skin cancer risk in humans. Genetics 192, 1493-1502.

D. Gianola, E. Manfredi and H. Simianer. 2012. On measures of association among genetic variables. Animal Genetics 43 (Suppl. 1) 10, 19-35.

X. L. Wu, C. Sun, T. M. Beissinger, G. J. M. Rosa, K. A. Weigel, N. de Leon Gatti and D. Gianola. 2012. Parallel Markov chain Monte Carlo - bridging the gap to high-performance bayesian computation in animal breeding and genetics**.** Genetics, Selection, Evolution 44:29 http://www.gsejournal.org/content/44/1/29

C. Sun, X. L. Wu, K. A. Weigel, G. J. M. Rosa, S. Bauck, B. W. Woodward, R. D. Schnabel, J. F. Taylor and D. Gianola. 2012. An ensemble-based approach to imputation of moderatedensity genotypes for genomic selection with application to Angus cattle. Genetics Research 94, 133-150.

Gianola, Daniel (con't)

Ulrike Ober, Julien F. Ayroles, Eric A. Stone, Stephen Richards, Dianhui Zhu, Richard A. Gibbs, Christian Stricker, Daniel Gianola, Martin Schlather, Trudy F. C. Mackay and Henner Simianer. 2012. Using whole-genome sequence data to predict quantitative trait phenotypes in Drosophila melanogaster. PLoS Genet 8 (5): e1002685. doi:10.1371/journal.pgen.1002685.

Vazquez A.I., Perez-Cabal M. A., Heringstad B., Rodrigues-Motta M., Rosa G. J. , Gianola D. and Weigel K. A.. 2012. Predictive ability of alternative models for genetic analysis of clinical mastitis. Journal of Animal Breeding and Genetics 129, 120-128.

D. Gianola D, G. J. Rosa and D. B. Allison. 2012. Humble Thanks to a Gentle Giant (an Obituary for James F. Crow). Frontiers in Genetics 3: 93.

S. Qanbari, T. M. Strom, G. Haberer, S. Weigend, A. A. Gheyas, F. Turner, D. W. Burt, R. Preisinger, D. Gianola and H. Simianer. 2012. A high resolution genome-wide scan for significant selective sweeps: an application to pooled sequence data in laying chickens. PLoS ONE 7(11): e49525. doi:10.1371/journal.pone.0049525

Perez-Rodriguez, P., Gianola, D., Gonzalez-Camacho, J. M. et al. 2012. G3-GENES GENOMES GENETICS12: 1595-1605

Manuscripts submitted and under review:

K. Haugaard, L. Tusell, P. Perez, D. Gianola, A. C. Whist and B. Heringstad. 2012. Prediction of clinical mastitis outcomes within and between environments using whole-genome markers (submitted to Journal of Dairy Science)

D. Gianola. 2012. Priors in whole genome regression: the Bayesian alphabet returns (submitted to Genetics)

D. Gianola, S. Qanbari and H. Simianer. 2012. An evaluation of a novel estimator of linkage disequilibrium (submitted to Heredity)

D. Gianola, F. Hospital, E. Verrier. 2012. On the contribution of an additive locus to genetic variance when inheritance is multifactorial with implications on the interpretation of GWAS (Theoretical and Applied Genetics, accepted)

G. Morota, M. Koyama, G. J. M. Rosa, K. A. Weigel and D. Gianola. 2012. Predicting complex traits using a diffusion kernel on SNP data with an application to dairy cattle and wheat breeding (submitted to BMC Genomics)

H. Okut, X. L. Wu, G. J. M. Rosa, S. Bauck, B. Woodward, R. D. Schnabel, J. F. Taylor and D. Gianola. 2012. Predicting expected progeny difference for marbling score in Angus cattle using artificial neural networks and Bayesian regression models (submitted to BMC Genomics)

B. D. Valente, G. J. M. Rosa, D. Gianola, X-L. Wu, and K. Weigel. 2012. Is Structural Equation modeling advantageous for the genetic improvement of multiple traits? (submitted to Genetics)

P. Perez-Rodriguez, D. Gianola, K. A. Weigel, G. J. M. Rosa and J. Crossa. 2012. An R package for fitting Bayesian regularized neural networks with applications in animal breeding. Journal of Animal Science (submitted)

G. Morota and D. Gianola. 2012. Evaluation of linkage disequilibrium in wheat with an L1 regularized sparse Markov network (Thereotical and Applied Genetics, submitted)

Greaser, Marion

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Thacker, B.E., Tomiya, A., Hulst, J.B., Suzuki, K.P., Bremner, S.N., Gastwirt, R.F., Greaser, M.L., Lieber, R.L., Ward, S.R.2012. Passive mechanical properties and related proteins change with botulinum neurotoxin A injection of normal skeletal muscle. J. Orthop. Res. 30:497-502.

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Guo, W., S. Schafer, M.L. Greaser, M.H. Radke, M.Liss, T. Govindarajan, H. Maatz, H. Schulz, S. Li, A.M. Parrish, V. Dauksaite, P. Vakeel, S. Klaassen, B. Gerull, L. Thierfelder, V. Regitz-Zagrosek, T.A. Hacker, K.W. Saupe, G.W.Dec, P.T. Ellinor, C.A. MacRae, B. Spallek, R. Fischer, A. Perrot, C. Özcelik, K. Saar, N. Hubner, and M. Gotthardt. 2012. RBM20, a gene for hereditary cardiomyopathy, regulates titin splicing. Nature Med. 18:766-773.

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Manuscripts submitted and under review:

Guo,W., J. M. Pleitner, K.W. Saupe, T. A. Hacker, and M. L. Greaser. Pathophysiological defects and transcriptional profiling in the RBM20-/- rat model. (PlosOne, under revision)

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Pleitner, J., W. Guo, B. Schmitt, J. Patel, T. Hacker, and M. Greaser. 2012. Hypothyroidism effects on wild type and mutant rats with altered cardiac titin expression. Biophys J. Supplement.

Pleitner, J., J. Patel, J. Koch, T. Hacker, W. Guo, and M. Greaser. 2012. Effects of hypothyroidism on wild type and mutant rats with altered titin expression. "Myofilament Proteins as Structural Scaffolds and Mediators of Function," international meeting, Madison, WI, June 2-5, 2012.

Guo, W., S. Li, S. Schafer, H. Schultz, T.A. Hacker, K.W. Supe, N. Hubner, M. Gotthardt, and M.L. Greaser. 2012. RBM20 regulates titin splicing, and defects result in cardiomyopathy. "Myofilament Proteins as Structural Scaffolds and Mediators of Function," international meeting, Madison, WI, June 2-5, 2012.

Khatib, Hasan

Books and book chapters:

Livestock Epigenetics. Wiley-Blackwell, Oxford, UK. Driver A, Huang W, and Khatib H (2012). Roles of Imprinted Genes in Fertility and Promises of the Genome-Wide Technologies. Livestock Epigenetics. Wiley-Blackwell, Oxford, UK, pp. 43-57

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Li G, Peñagaricano F, Weigel KA, Zhang Y, Rosa GM, and Khatib H (2012) Comparative genomics between fly, mouse, and cattle identifies genes associated with sire conception rate. J Dairy Sci. 95(10):6122-6129.

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Manuscripts accepted/in press:

Driver A, and Khatib H (INVITED REVIEW) (2012) Heat shock proteins: potentially powerful markers for fertility in livestock species. Journal of Animal Science (published online December 10, 2012).

Lan XY, Peñagaricano F, DeJung L, Weigel KA, and Khatib H (2012) A missense mutation in the *PROP1* gene affects male fertility and milk production traits in US Holstein population. J Dairy Sci. 2012 Dec 13. doi:pii: S0022-0302(12)00912-5.

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Gambra R, Peñagaricano F, Kropp J, Khateeb K, Weigel KA, Lucey J, and Khatib H (2012) Genomic architecture of bovine kappa-casein and beta-lactoglobulin. Journal of Dairy Science (under re-review)

Lan X, Cretney EC, Kropp J, Khateeb K, Berg MA, Peñagaricano F, Magness R, Radunz AE, and Khatib H (2012) Maternal diet during pregnancy induces transcriptomic and epigenomic changes in fetal tissues in sheep. Frontiers in Genetics (under review)

Driver A, Huang W, Kropp J, Peñagaricano F, and Khatib H (2012) Knockdown of *CDKN1C (p57kip2)* and PHLDA2 results in abnormal development of bovine preimplantation embryos. BMC Developmental Biology (under re-review).

Abstracts presented at scientific meetings during the current reporting year:

Lan X, Gambra R, Berg MA, Cretney EJ, khatib H, and Radunz AE. 2012. Maternal dietary energy source during gestation affects expression of imprinted genes in fetal tissues in sheep. ADSA®-ASAS Joint Annual Meeting, Phoenix, AZ July 15-July 20.

Kirkpatrick, Brian

Manuscripts submitted and under review:

Zare, Y., G.E. Shook, M.T. Collins and B.W. Kirkpatrick. 2013. Evidence of seasonality and birth clusters of *Mycobacterium avium* subspecies *paratuberculosis* infection in US dairy herds. Preventive Veterinary Medicine (reviewed, now revised and under review)

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Parrish, John

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Reed, Jess

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Krueger, C.G., J.D. Reed, R.P. Feliciano, A.B. Howell. Quantifying and characterizing proanthocyanidins in cranberries in relation to urinary tract health. Analytical and Bioanalytical Chemistry. 2013 (Accepted- In Press)

Richards, Mark

Tatiyaborworntham, N, Faustman, C, Yin, S, Ramanathan, R, Mancini, R.A, Suman, S.P, Beach, C.M, Maheswarappa, N.B,Grunwald, E.W. and Richards, M.P. (2012). Redox Instability and hemin loss of mutant sperm whale myoglobins induced by 4-hydroxy-nonenal *in vitro*. J. Agric. Food Chem. 60, 8473-8483.

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Rosa, Guilherme

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Editorials

Gianola, D., Rosa, G. J. M. and Allison, D. B. Humble thanks to a gentle giant (an obituary for James F. Crow) *Frontiers in Genetics* 3: 93, 2012. (http://www.frontiersin.org/Evolutionary_and_Population_Genetics/10.3389/fgene.2012 .00093/full)

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Vazquez, A. I., de los Campos, G., Klimentidis, Y. C., Rosa, G. J. M., Gianola, D., Yi, N. and Allison, D. B. A Comprehensive genetic approach for improving prediction of skin cancer risk in humans. *Genetics* 192: 1493-1502, 2012.

Morota, G., Valente, B. D., Rosa, G. J. M., Weigel, K. A. and Gianola, D. An assessment of linkage disequilibrium in Holstein cattle using a Bayesian network. *Journal of Animal Breeding and Genetics* 129: 474-487, 2012.

Bignardi, A. B., El Faro, L., Rosa, G. J. M., Cardoso, V. L., Machado, P. F., and Albuquerque, L. G. Bayesian analysis of random regression models using B-splines to model test-day milk yield of Holstein cattle in Brazil. *Livestock Science* 150: 401-406, 2012.

Rosa, Guilherme (con't)

Wu, X.-L., Sun, C., Beissinger, T. M., Rosa, G. J. M., Weigel, K. A., de Leon, N. and Gianola, D. Parallel Markov chain Monte Carlo - bridging the gap to highperformance Bayesian computation in animal breeding and genetics. *Genetics Selection Evolution* 44: 29, 2012.

Sun, C., Wu, X. L., Weigel, K. A., Rosa, G. J. M., Bauck, S., Woodward, B. W., Schnabel, R. D., Taylor, J. F. and Gianola, D. An ensemble-based approach to imputation of moderate-density genotypes for genomic selection with application to Angus cattle. *Genetics Research* 94: 133–150, 2012.

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Vazquez, A. I., Perez-Cabal, M. A., Heringstad, B., Rodrigues-Motta, M., Rosa, G. J. M., Gianola, D., and Weigel, K. A. Predictive ability of alternative models for genetic analysis of clinical mastitis. *Journal of Animal Breeding and Genetics* 129(2): 120- 128, 2012.

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Pérez-Cabal, M. A., Vazquez, A. I., Gianola, D., Rosa, G. J. M., and Weigel, K. A. Accuracy of genome-enabled prediction in a dairy cattle population using different cross-validation layouts. *Frontiers in Genetics* 3:27, 2012. doi:10.3389/fgene.2012.00027

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Boligon, A. A., Long, N., Albuquerque, L. G., Weigel, K. A., Gianola, D. and Rosa, G. J. M. Comparison of selective genotyping strategies for prediction of breeding values in a population undergoing selection. *Journal of Animal Science*, 2012 (in press)

Caetano, S. L., Rosa, G. J. M., Savegnago, R. P., Ramos, S. B., Bezerra, L. A. F., Lobo, R. B., de Paz, C. C. P. and Munari, D. P. Characterization of the variable cow's age at last calving as a measurement of longevity by using the Kaplan–Meier estimator and the Cox model. *Animal*, 2012 (in press)

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Valente, B. D., Rosa, G. J. M., Gianola, D., Wu, X.-L. and Weigel, K. A. Is Structural Equation Modeling useful for genetic improvement of multiple traits? Submitted to *Genetics* (minor revision)

Pérez-Rodríguez, P., Gianola, D., Weigel, K. A., Rosa, G. J. M., Crossa, J. and Avendaño, S. An R package for fitting Bayesian regularized neural networks with applications in animal breeding. Submitted to *Journal of Animal Science* (minor revision)

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Muir, W., Ragavendran, A., Rosa, G. J. M., Meuwissen, T. H. E., Misztal, I., Groenen, M., Wing, T., Okimoto, R., Vereijken, A. and Cheng, H. H. Genomic selection in poultry, results with broilers and comparison with traditional BLUP. In: Plant & Animal Genomes XX Conference, San Diego, CA. January 14-18, 2012.

Rosa, Guilherme (con't)

Ragavendran, A., Muir, W., Misztal, I., Rosa, G. J. M., Hawken, R. L., Okimoto, R., Wing, T., Vereijken, A., Groenen, M., Bastiaansen, J. and Cheng, H. H. Comparison of signatures of selection under BLUP versus genomic selection regimes in two broiler lines. In: Plant & Animal Genomes XX Conference, San Diego, CA. January 14-18, 2012.

Wu, X.-L., Hayrettin, H. Duan, H., Beissinger, T., Bauck, S., Woodward, B. W., Rosa, G. J. M., Weigel, K. A., de Leon, N., Taylor, J. F. and Gianola, D. Parallel-BayesCpC on OSG: grid-enabled high-throughput computing for genomic selection in practice. In: Plant & Animal Genomes XX Conference, San Diego, CA. January 14-18, 2012.

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A.E. Iager, A. E., Kocabas, A. M., Out, H. H., Ruppel, P., Langerveld, A., Schnarr, P., Suarez, M., Jarrett, J. C., Conaghan, J., Rosa, G.J.M., Fernández, E., Rawlins, R. G., Cibelli, J. B. and Crosby, J. A novel biomarker signature expressed in human cumulus cells predicts oocyte pregnancy potential during ART. Human Reproduction 27 (Suppl 2), pp. ii1-ii3, 2012.

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Rosa, G. J. M. Inferring causal phenotype networks using structural equation models. In: 57th Annual Meeting of the Brazilian Region (RBRAS), Piracicaba - Brazil, May 5-9, 2012.

Schaefer, Dan

Manuscripts accepted/in press:

Lin, M., D. M. Schaefer, G. Q. Zhao and Q. X. Meng. 2013. Effects of nitrate adaptation by rumen inocula donors and substrate fibre proportion on in vitro nitrate disappearance, methanogenesis, and rumen fermentation acid. Animal (accepted)

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Wagner, D. R., E. L. Edgerton, C. T. Jobsis, M. R. Schaefer and D. M. Schaefer. 2012. Effect of rubber slatted flooring on behavior, joint health, and production measures of feedlot cattle. Beef Cattle Welfare Symposium, Saskatoon, Saskatchewan, Canada.

Burgett, R. B., J. R. Luther, D. L. Thomas, D. M. Schaefer, M. A. Berg and A. E. Radunz. 2012. Effects of limit-feeding dried distillers grains to ewes during mid- to late-gestation on ram progeny post-weaning performance and carcass composition. J. Anim. Sci.

Sindelar, Jeff

Peer-reviewed manuscripts and book chapters:

Sindelar, J.J. and A.L. Milkowkski. 2012. Human Safety Controversies Surrounding Dietary Nitrate and Nitrite. Nitric Oxide 26(4): 259-266.

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McDonnell, L.M., K. A. Glass, and J.J. Sindelar. (2012). Identifying Ingredients that Inhibit Listeria monocytogenes for Use in Natural, Organic, and Clean-Label Ready-to-Eat Meat and Poultry Products. (manuscript accepted to Journal of Food Protection: October 2012).

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King, A.M., C. E. Ohman, B. Van Hemelryk, S. Y. Park, T. D. Crenshaw, J. J. Sindelar. (2012). Impacts of Withdrawal Periods of Dried Distillers Grains with Solubles on Quality Attributes of Fresh Pork Bratwursts and Bacon. (manuscript submitted to Journal of Animal Science; October 2012).

Abstracts presented at scientific meetings during the current reporting year:

McDonnell, L., M. Golden, V. Sheehan, P. Ludtke, J. Sindelar, and K. Glass. 2012. Inhibition of *Listeria monocytogenes* in Laboratory Media and Deli-Style Turkey Breast Using Alternate Curing Systems and Clean Label Antimicrobials. Food Research Institute (annual meeting at UW-Madison for academic and meat/food industry food safety experts). 2012 Spring Meeting, Madison, WI (May 2012)

Ohman, C.E., B. Van Hemelryk, A.M. King, S. Park, M.P. Richards, J.R. Claus, and J.J. Sindelar. 2012. The Impact of Dry Distillers Grains on the Quality of Processed Meat Products. Reciprocal Meat Conference; Fargo, ND (June 2012).

King, A.K. and J.J. Sindelar. 2012. The Impact of Ingoing Sodium Nitrite and Residual Nitrite on Growth of *Listeria monocytogenes* in a Cured Cooked Meat Model System. Food Research Institute 2012 Spring Meeting; Madison, WI (May 2012).

McMinn. R. P., J.J. Sindelar, and K.A. Glass. 2012. Thermal Inactivation of *Listeria monocytogenes, Salmonella* and Shiga-Toxin Producing *E. coli* in Ready-to-Eat Roast Beef. Food Research Institute 2012 Spring Meeting; Madison, WI (May 2012).

Sindelar, Jeff (con't)

King, A.M., R.P. McMinn, J.J. Sindelar, K.A. Glass, and R. Hanson. 2012. Thermal Inactivation of *Listeria monocytogenes, Salmonella* and Shiga-Toxin Producing *E. coli* in Ready-to-Eat Ham and Turkey Breast. Reciprocal Meat Conference; Fargo, ND (June 2012).

Ohman, C. E., J. B. Wenther, A. M. King, and J.J. Sindelar. 2012. The Development of Reference Standards for the Nutritional Labeling of Single-Ingredient, Ground Meats Containing Varying Fat Percentages. Reciprocal Meat Conference; Fargo, ND (June 2012).

VonTayson, R., R. Weyker, K.L. Glass, and J.J. Sindelar. 2012. Inhibition of *Listeria monocytogenes* and *Leuconostoc mesenteroides* in an Uncured Deli-Style Turkey Breast 8. Using Clean Label Antimicrobials. Food Research Institute 2012 Spring Meeting; Madison, WI (May 2012).

VonTayson, R., R. Weyker, K.L. Glass, and J.J. Sindelar. 2012. Inhibition of *Listeria monocytogenes* and *Leuconostoc mesenteroides* in an Uncured Deli-Style Turkey Breast Using Clean Label Antimicrobials. International Association for Food Protection; Providence, RI (July 2012).

Thomas, Dave

Teaching publications:

Thomas, D.L. 2012. Genetic Improvement of Sheep Through Selection. In: Molecular and Quantitative Animal Genetics, H. Khatib (Ed.). Wiley-Blackwell. (Accepted, in review).

Thomas, D.L. 2012. Mating Systems: Inbreeding. In: Molecular and Quantitative Animal Genetics, H. Khatib (Ed.). Wiley-Blackwell. (Accepted, in review).

Thomas, D.L. 2013. Dairy Sheep. In: The Science of Providing Milk for Man, J. Campbell and R. Marshall (Eds.). Waveland Press, Inc., Long Grove, Illinois. (In Press).

Peer-reviewed manuscripts and book chapters:

Thomas, D.L. 2012. Utilization and potential of estimates of genetic value from an industry perspective. In: Research Symposium - Utilization of Genomic Information for the Sheep Industry. Sheep & Goat Res. J. 27:Sym 13-Sym 15. Online: http://www.sheepusa.org/user_files/file_1106.pdf.

Abstracts presented at scientific meetings during the current reporting year:

Hadfield, T., C. Wu, D. Waldron, G.E. Moss, B. Alexander, D. Thomas, J. Kijas, X. Dai, M. Halling, B. Bellaccomo, and N. Cockett. 2012. The use of a 50K SNP array for identifying genomic regions associated with a range of traits in Rambouillet sheep. Plant and Animal Genome XX Conference, San Diego (Abstr. PO578) (Online: https://pag.confex.com/pag/xx/webprogram/Paper4274.html).

Ferreira, V.C., D.L. Thomas, and G.J. Rosa. 2012. Survival in crossbred lambs: Individual, maternal, heterosis. J. Anim. Sci. Vol. 90, Suppl. 3:20 and J. Dairy Sci. Vol. 95, Suppl. 2:20. (Online: http://www.jtmtg.org/2012/abstracts/15.pdf).

Burgett, R.L., J.R. Luther, D.L. Thomas, D.M. Schaefer, and A.E. Radunz. 2012. Effects of limit-feeding dried distillers grains to ewes during mid- to late-gestation on ram progeny post-weaning performance and carcass composition. J. Anim. Sci. Vol. 90, Suppl. 3:598 and J. Dairy Sci. Vol. 95, Suppl. 2:598. (Online: http://www.jtmtg.org/2012/abstracts/593.pdf).

FY12

PIs from the Department of Animal Science have submitted 51 grants/contracts in the FY12 for a total of $7,553,378. Twenty-nine grants (57%) have been funded for a total of $2,721,472 (including $512,694 F&A).

7/01/11-6/30/12 Animal Science Grant submissions

Source	Submitted	Funded	% Funded
UW System[1]	10	5	50
Federal/State[2]	29	15	52
Private	12	9	75
Total	51	29	57

[1] Includes TIF, IEDR, CERANR
[2] USDA (including HATCH & ARS), US Geological Dept, NIH, NSF, USAID

FY13

PIs from the Department of Animal Science have submitted 37 preproposals, grants/contracts in the FY13 for a total of $9,713,004. Eight grants (22%) have been funded for a total of $1,121,112 (including $181,526 F&A).

7/01/12-6/30/13 Animal Science Grant submissions

Source	Submitted	Pending	Funded	% Funded
UW System[1]	7	0	1	14
Federal/State[2]	24	1	3	13
Private	6	1	4	67
Total	37	2	8	22

[1] Includes TIF, Graduate School, IEDR, Baldwin
[2] USDA (including HATCH), NIH, US-AID

FY14

PIs from the Department of Animal Science have submitted 18 preproposals, grants/contracts in the FY14 for a total of $1,324,502. To date, three grants (17%) have been funded for a total of $99,673 (including $13,473 F&A).

7/01/13-9/26/13 Animal Science Grant submissions

Source	Submitted	Pending	Funded	% Funded
UW System[1]	2	0	1	50
Federal/State[2]	9	9	0	0
Private	7	5	2	29
Total	18	14	3	17

[1] Includes TIF
[2] USDA (including HATCH), NIH

Staffing Plan

Mission Statement: The Department of Animal Sciences generates new knowledge in the humane use of animals for the production of safe food and fiber; the use of animals for companionship, recreation and entertainment; and the use of animals in biomedical research. This knowledge is integrated with existing facts and theories in an instructional program for undergraduate, graduate and extension audiences in a manner that builds human capital, fosters economic vitality and improves the quality of life and the environment for our state, national and international clientele. Our expertise is shared with other faculty and programs in the University of Wisconsin.

Academic Program: This department spans research, teaching and Extension programs that encompass five disciplines and six program areas. We seek to sustain disciplinary strength in Reproductive Physiology/ Endocrinology, Animal Breeding and Genetics, Meat Science/Muscle Biology, Nutrition, and Cell Biology/ Immunology/Toxicology. In addition to the disciplinary areas, our faculty members contribute to broad programs classified as follows: 1) biotechnology, 2) meat processing, safety and quality, 3) production management, 4) international animal agriculture, 5) toxicology, and 6) animal health and welfare. Our efforts are focused on the six primary domesticated animal species (cattle, chickens, swine, sheep, turkeys, and horses).

Instruction: The core undergraduate degree in Animal Sciences is met by 21 credits of coursework, many taught in conjunction with the Dairy Science Department. Faculty and academic staff members also teach approximately 50 credits of undergraduate courses for the Animal Sciences and Poultry Science majors or as service courses to campus as a whole. Faculty members teach graduate courses in specialty areas that support instruction in the general biology graduate program on campus.

Future Faculty Needs: The following positions are critical to maintaining the core strength of Animal Sciences. With an aging faculty (8 of our 19 faculty are over 56 and 2 are over 65), we anticipate that retirements will decrease our ability to fulfill our mission. Following are brief descriptions of our future faculty needs in order of greatest priority relative to maintaining the core mission of the department.

Reproductive Physiology/Endocrinology: Currently we have only two faculty members in this discipline, Parrish and Cezar. However, Cezar is currently on leave until May 2012. We anticipate that a faculty request for a teaching and research position in this core discipline will be a high priority in the next year.

Muscle Molecular Biologist: The department is anticipating the retirement of our muscle molecular biologist (M. Greaser). The biology of muscle tissue at the molecular level continues to be a significant focus of our department and our muscle biology program. The muscle biology/meat science faculty group currently consists of a meat scientist (Claus), Extension specialist (Sindelar), a basic muscle lipid chemist (Richards), and a basic muscle protein biologist (Greaser). Strength in all these areas must be maintained. The new hire would focus on studies of molecular and cellular mechanisms controlling gene expression in food animal species. These research fields also have direct relevance to human health issues such as sarcopenia and degenerative muscular diseases. Teaching responsibilities would include AS 725, Muscle Biology, plus contributions to AS 305, Introduction to Meat Science and Technology, a core undergraduate course for our major.

Cell Biology, Immunology, and Health: Of 38 entering freshmen and transfer students in the fall of 2011, 25 indicated outright that they planned to attend vet school. Most others indicated an interest in animal care and husbandry. In order to better serve these students and strengthen this disciplinary area within the department, we anticipate the need for faculty additions in two areas: 1. Basic Animal Pharmacology – Given the broad range of research activities in our department as well as in CALS overall, an individual specializing in animal pharmacology in areas of drug action, drug distribution, or drug discovery would be a substantial addition to the expertise here in Animal Sciences, CALS, and the UW-Madison campus. 2. Applied Animal Immunology – Immunology is a core discipline to the mission of the department because of its importance in understanding infectious diseases and its application to basic animal biology. A faculty position in immunology would strengthen the undergraduate teaching in the department, CALS and the broader campus because there is uncertainty regarding the future of undergraduate instruction in this topic. A core undergraduate course in immunology would increase our ability to give relevant education to our pre-vet and other students interested in animal and human health. The faculty position in immunology would also strengthen the graduate research and teaching program of the department.

Animal Breeding and Genetics: There was a recent CALS initiative to hire two new genetics faculty members in the area of population, quantitative, evolutionary, or computational genetics in the Departments of Agronomy, Animal Sciences, Entomology, or Genetics. The pool of applicants was very deep, and CALS administration allowed offers to be made to three candidates from among the four brought to campus for interviews. Unfortunately, only one of the offers was accepted; a population geneticist will join the Department of Genetics. Offers to a quantitative geneticist by Animal Sciences and an evolutionary geneticist by Entomology were turned down. Even though the needs in CALS for these positions still exist, CALS administration has indicated that they will not reopen this search due to other pressing needs in the college. An additional quantitative geneticist working with genomic data would be an excellent addition to the Animal Sciences faculty and would also meet broader college and campus needs for research collaborations and the teaching of a beginning graduate-level course in quantitative genetics. However, since the current Animal Sciences genetics group is composed of five faculty members (Gianola, Khatib, Kirkpatrick, Rosa, and Thomas), we feel that the priority faculty need in the department, at this time, is not in genetics.

Extension: The Department has identified the need for a state Extension specialist in the area of livestock health and well-being. This faculty position would support the current Extension programs in the UW-Madison Department of Animal Sciences including beef cattle, equine, sheep, goats, poultry, and companion animals, and in the state with the UW Extension Swine Team in the areas of best management practices focused on proper care, animal handling, food safety, and health. In the area of Extension education, the individual would support current quality assurance program efforts and develop education programs for animal care and well-being, on-farm audit programs, animal health, disease traceability, and animal welfare issues. The candidate would be required to establish a nationally recognized applied research program aimed at addressing animal health, quality assurance, and well-being issues for livestock. Areas of applied research may include but are not limited to effectiveness of best management practices, pre-harvest food safety, animal handling and facilities regarding animal well-being, and production systems to provide abundant, safe, affordable food animal products. The candidate would also support the department's current efforts in the area of animal welfare.

	Instruction		Research		Extension	
2700 (Academic Programs)	101-2	%	101-4	%	104/143-5	%
Faculty Salary & Academic Staff salary	688,267	81.00	1,788,405	67.86	284,349	67.41
Classified Staff salary	70,008	8.24	270,546	10.26	104,932	24.88
Hourly - Student & LTE & Supplies	30,569	3.60	5,612	.21	32,541	7.71
2710 (Animal Operations)						
Academic Staff salary	39,863	4.69	254,290	9.65		
Classified Staff salary	18,100	2.13	285,614	10.84		
Hourly - Student & LTE& Supplies	2,900	.34	31,102	1.18		
Total	849,707	100%	2,635,569	100%	421,822	100%