

Curriculum Vitae

Dr. Massimo Bionaz

Department of Animal and Rangeland Sciences

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A. EDUCATION AND EMPLOYMENT INFORMATION

Education

2000-2004 **PhD**, Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italy
Major: Physiopathology in Dairy Cow
Thesis Title: *Studies on relationships between hepatic functionality and inflammatory phenomena around parturition. Results on productive and reproductive performances*

1994-2000 **Italian Laurea**, Università Cattolica del Sacro Cuore, Piacenza, Italy
Major: Zootechnics
Minor: Agricultural Economics
Thesis Title: *Chemical-nutritional characteristics of Valle d'Aosta forages and diets optimization for lactating dairy cows*

Employment history

19 November 2012-Present **Assistant Professor**. *Dairy Production and Management*, Department of Animal and Rangeland Sciences. Oregon State University, Corvallis, 97333, OR, USA

15 May 2009-27 August 2012 **Post-doctoral Research Associate**. *Utilization of adipose-derived stem cells for maxillofacial bone repair*, Laboratory of Stem Cell Biology and Engineering at Animal and Institute for Genomic Biology, University of Illinois at Urbana-Champaign, 61801 IL, USA

January 2006-15 May 2009 **Post-doctoral Research Associate**. *Nutrigenomics and functional genomics in cattle and pig*, Mammalian NutriPhysioGenomics Laboratory, Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, 61801 IL, USA

2004-2005 **Post-doctoral Fellow**. *PPAR α activation by long-chain fatty acids in dairy cows*, Dairy and Animal Science, Pennsylvania State University, State College, 16803 PA, USA

B. TEACHING AND OTHER ASSIGNMENTS

1. Instructional Summary

i. Credit Courses

Inst.¹	Type	Course	Title	Enrol²	Term	Year(s)
OSU	Primary Instructor	ANS 439/539	Dairy Production Systems	41	Fall	2013-16
		ANS 505	Reading and Conference	10	All	2016-17
		ANS 401	Research in Molecular Nutrition	10	All	2014-17
		ANS 538	Biology of Lactation	30	Spring	2016
	Lecturer	BRR 100/401	Research and Scholarship	49	Fall	2016
		VMB 674	Vaccine and New Therapies	16	Fall	2015
		ANS 560	Lipid Metabolism	20	Spring	2016
		NUTR 507/607	Seminar	6	Spring	2015
		VMB/MCB 671	Molecular Tools	10	Fall	2014-16
		ANS 313	Applied animal nutrition: feeds and ration formulation	125	Winter	2013-16
ANS 438	Exploring World Agriculture	30	Spring	2014-17		
UIUC	Instructor	ANSC 232	Stem Cell Basics and Application	10	Fall	2009-11
		ANSC 453	Stem Cell Biology	8	Spring	2010-12
	Lecturer	NUTR 511	Regulation of Metabolism	16	Spring	2012
		ANSC 222	Anatomy and Physiology	210	Fall	2010
PS	Lecturer	ANSC 506	Ruminology	6	Fall	2005
UCSC	Lecturer		Physiopathology of Dairy Cows	6	Spring	2003

¹ Institution: OSU = Oregon State University; UIUC = University of Illinois at Urbana-Champaign; PS = PennState University; UCSC = Università Cattolica del Sacro Cuore (Piacenza, Italy)

² Maximum enrollment

ii. Non-Credit Courses or Workshops

Summary table of workshops organized since hire

Topic	# events	Invited teaching events		Year	# attendees
		National	International		
qRT-PCR basics, normalization and data analysis	2	0	0	2014	10
Real time Polymerase Chain Reaction: basics and methods	1	0	1	2015	30
TOTAL	3				

iii. Curriculum Development

At Oregon State University

1. **ANS 439/539. Dairy Production Systems** (4 credits). Full responsibility, taught annually. This is an ANS Core production class for *undergraduates* that satisfies the requirement for the Animal Production option in the Animal and Rangeland Sciences department. The class for *graduates* (ANS539) satisfies the requirement for the Dairy Production emphasis area. The course includes 3 hours/week of lecture plus 1 hour/week of recitation. Student learning outcomes emphasize 1) the complexity of the dairy production systems with a large emphasis on the connections between each part with the dairy cow as the center of the system; 2) the importance of basic knowledge on the biology of the cow to solve practical complex issues in the dairy production (i.e., application of critical thinking); 3) exposure to real-world problems and opportunities in the dairy industry. The course includes a first part with a theoretical emphasis where basics knowledge on cow physiology and anatomy, nutrition, welfare, and reproduction is provided which is taught by me and a second part that is more practical where speakers with specific expertise are invited to talk about dairy industry-related topics. The class also requires the students to visit the OSU Dairy Center twice (once at beginning and once at the end of the class) and write a professional report on the farm using knowledge gathered during the course. As optional opportunity, the students can visit two commercial farms nearby Corvallis accompanied by the instructor and do a professional report. For the ANS 539 additional work and learning is requested by the graduate students. I expect them to show mastering of at the least one topic related to the dairy industry. For this, the student have to develop and provide a lecture to all the students on a selected topic among several I suggest (however, they can suggest their own). The lecture is graded by the students participating to the lecture and the material of the lecture can be used in the exams and tests.
2. **ANS 538. Biology of Lactation** (3 credits). Full responsibility, taught annually starting Spring 2016. This is a graduate class that satisfies the requirement for the Dairy Production emphasis. The course will include 1 hour/week of lecture and 2 hours/week of paper presentation by the students. This course aims to provide basic knowledge on evolution, anatomy, development, and physiology of the mammary gland and molecular mechanisms and hormones controlling milk synthesis. In addition, it will cover novel theoretical and methodological approaches related to the study of milk synthesis. Student learning outcomes emphasize 1) Reading, critically evaluating, and presenting fundamental concepts in mammary biology and milk synthesis from the primary literature and 2) lecturing and discussing novel topics in mammary biology and milk synthesis. By the end of the course the student should have a robust understanding of the mammary biology and milk synthesis and be comfortable to discuss latest related scientific discoveries in the topic. The students should also have an appreciation for the harmonious biological complexity that make milk synthesis possible.
3. **ANS 505. Reading and Conference** (1-16 credits). Full responsibility, taught every quarter starting Winter 2016. This is a class that graduate students have to take every quarter. The class is open to up to 10 students and was set up for my graduate students but it is open to graduate students from other labs. The course aims to develop critical

thinking by evaluating primary scientific literature and to learn how to present to scientists and lay people scientific data.

I have been a guest lecturer in 6 courses

1. **ANS 313 Applied Nutrition and Ration Formulation.** I have revised/developed the material and taught 2 lectures about ruminant nutrition and ration formulations for dairy cows course.
2. **ANS 438 Exploring World Agriculture.** I have developed a lecture where I have given the students a “taste of Italy” by bringing them in a tour of agricultural Italy by using pictures, music, and real food tasting in class.
3. **VMB/MCB 671 Molecular Tools.** I have developed a lecture to provide the students basic and advanced practical knowledge on the real time qPCR.
4. **NUTR 507/607I Seminar.** I have developed a scientific seminar titled *Systems Biology and Nutrigenomics in Livestock: Disclosing Complexity and Guiding Adaptations* where I covered the basic knowledge on the new field of nutrigenomics and reviewed several of my past studies.
5. **ANS 560 Lipid Metabolism.** I developed a lecture where I covered the basic knowledge for the new field of nutrigenomics, especially considering the emerging roles of the nuclear receptor Peroxisome Proliferator-activated Receptors and the activation of them to aid cows in early post-partum cows.
6. **VMB 674 Vaccines and New Therapies.** I developed a lecture where I covered the basic knowledge for the new field of nutrigenomics and the potential in helping addressing physiopathological issues in post-partum cows using several of my own recent studies.

At other institutions prior to the hire

University of Illinois at Urbana-Champaign:

- **ANSC 232 Stem Cell Basics & Application (Fall 2010, 2011, 2012).** Co-Instructor. I have taught the section dealing with adult stem cells and I have developed original materials, including stem cells microenvironment (“niches”), bone regeneration, heart regeneration, haematopoietic stem cells, and current clinical applications of stem cells.
- **ANSC 453 Stem Cell Biology (Spring 2010, 2011, 2012).** Co-Instructor. I have taught the section dealing with adult stem cells and I have revised/developed new materials for the following lectures: nuclear reprogramming, germ stem cells, ectodermal-derived stem cells, and mesodermal-derived stem cells.
- **NUTR 511 Regulation of Metabolism (Spring 2012).** I have revised 4 lectures about fatty acid esterification and lipoprotein metabolism. The material was originally prepared by Prof. Juan J Loo.
- **ANSC 222 Anatomy and Physiology (Fall 2010).** I have developed original material and delivered a lecture titled “Spine and Thorax”.

Università Cattolica del Sacro Cuore (Piacenza, Italy):

- **Physiopathology of Dairy Cows.** (Undergraduate/graduate course). I have developed original materials in 2004 for a lecture titled “Welfare assessment model”.

iv. Graduate and Undergraduate Students and Postdoctoral Trainees

Graduate student advised (3 PhD and 1 Master)

- Shelby Armstrong, PhD (co-advised with Dr. Gerd Bobe). Started January 2014. Expected to graduate in December 2016. Supported by Omnigen (PrinceAgri). Author of 2 conference abstracts published on the Journal of Dairy Science and 3 papers in preparation.
- Katherine Swanson., PhD Student (co-advised with Dr. Gerd Bobe). Started September 2015. Expected to graduate by the end of 2018. Supported by USDA NIFA NNF grant.
- Shana Salah Ali Jaff, PhD Student. Started September 2015. Expected to graduate by the end of 2018. Originally supported by a scholarship from Iraq government (now self-supported with the help of the Agricultural Sciences College).
- Fernanda Trindade da Rosa, Master Student. Started January 2015. Expected to graduate by December 2016. Supported by the start-up funding. Author of 1 conference abstract published in the J Dairy Science.
- Samantha G Richards, Master Student (as co-advisor with Dr. Alfred Menino as principal advisor). Started January 2014 but ended 6 months later due to personal issues. Supported by the start-up funding. Author of 1 conference abstract published in the J Dairy Science.

Graduate student, committee member (3 total)

- Noor Al-Bader, PhD, Dept. of Botany and Plant Pathology, PI Dr. Pankaj Jaiswal
- Brian A. Head, MS, Depart. of Animal and Rangeland Sciences, PI Dr. Gita Cherian
- Heaven Le A Roberts, Depart. of Animal and Rangeland Sciences, PI Dr. Gita Cherian

Graduate student, Graduate Council Representative (2 total)

- Gregory Turbes, M.Sc. Dept. of Food Science and Technology. Defense date 12 September 2014. PI Dr. Lisbeth Goddik.
- Sarah Vojnovich, M.Sc. Department of Microbiology, PI Dr. Jerri Bartholomew

Undergraduate student trained (17 total)

2016

- **Randi Wilson**, Dept. of Animal and Rangeland Sciences, worked on two projects: the effect of miRNA in milk on childhood obesity and effect of Intellibond microminerals on transition dairy cows project. February 2016 to present
- **Sarah Akers**, Dept. of Animal and Rangeland Sciences, worked on the effect of miRNA in milk on childhood obesity project. February 2016 to present
- **Tamay Guevara**, Dept. of Animal and Rangeland Sciences, worked on the effect of miRNA in milk on childhood obesity project. February 2016 to present
- **Cassie Penix**, Dept. of Animal and Rangeland Sciences, worked on the effect of miRNA in milk on childhood obesity project. February 2016 to present
- **Minda Newhouse**, Dept. of Animal and Rangeland Sciences, worked on the effect of miRNA in milk on childhood obesity project. February 2016 to present

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2015

- **Jennifer L. Belveal**, Dept. of Biology, worked on the poison oak project, from October 2014 to present, coauthor of 1 conference abstract
- **Austin Nguyen**, Dept. of Bioresource Research, developed an online bioinformatic tool, from May 2015 to present, supported by URSA Engage grant, enrolled in BRR-410 Research class
- **Jaye Western**, Dept. of Animal and Rangeland Sciences, worked on two *in vivo* projects with goats and calves, from July 2015 to present
- **Alex van der Velde**, Dept. of Animal and Rangeland Sciences, worked on an *in vivo* projects with goats, from July to September 2015
- **Jennifer J Bruton**, Dept. of Animal and Rangeland Sciences, worked on an *in vivo* projects with goats, from July to September 2015
- **Emily Sahagun**, Dept. of Animal and Rangeland Sciences, she received a STEM Leader fellowship to work in my lab. She is directly involved in two *in vivo* projects with goats and pigs, plus one project with cells isolated from the milk of dairy cows. From January 2016 to present

2014

- **Francisco David Yanqui-Rivera**, Dept. of Animal and Rangeland Sciences, analyzed WBC differential in blood of goats and developed a protocol for histological analysis of goat tissues, from November 2013 to November 2014, coauthor of 1 conference abstract and 1 paper in preparation
- **Mackenzie K. Jones**, Dept. of Animal and Rangeland Sciences, analyzed WBC differential in blood of goats, from November 2013 to June 2014. Credits with ANS401.

2013

- **Samantha G Richards**, Dept. of Animal and Rangeland Sciences, worked in an *in vivo* project as Student technician from August to December 2013, coauthor of 1 conference abstract
- **Lauren Robertson** Dept. of Animal and Rangeland Sciences, worked in a *in vivo* project as Student technician from August 2013 to present, coauthor of 1 conference abstract
- **Danita Dahl**, Dept. of Animal and Rangeland Sciences, worked in a *in vivo* project as Student assistant from August to October 2013, coauthor of 1 conference abstract
- **Laura Johnston**, Dept. of Animal and Rangeland Sciences, worked in a *in vivo* project as Student assistant from August to October 2013, coauthor of 1 conference abstract

International Undergraduate students (2 total)

- **Sebastiano Busato** (Undergraduate student, Animal Science and Crop Production, Zamorano University, Honduras, January to April 2016). He is working on a project *in vivo* with dairy calves. Grant from Oregon Beef Council 2015/2016.
- **Fatima Cecilia Avaroma Gutierrez** (Undergraduate student, Animal Science and Crop Production, Zamorano University, Honduras, January to April 2016). She is working on a project *in vivo* with dairy calves. Grant from Oregon Beef Council 2015/2016.

Postdoctoral trainees (1 total)

- **Johan Osorio** (April 2014 to March 2016). First author of 1 review article submitted to Physiological Genomic journal, 2 research articles in preparation, and 2 conference abstracts published in the Journal of Dairy Science. Co-author of one review article

published in the Journal of Animal Science and first author in a review article published in Physiological Genomics journal. He is first author of 2 and co-author of additional 2 conference abstracts published in the Journal of Dairy Science. He is PI of a grant funded by the Oregon Beef Council (2015/2016) and co-PI of 2 grants submitted (but not funded) to the Agricultural Research Foundation (2014/2015) and AFRI NIFA USDA (2015), and 1 grant (pending) to the Oregon Beef Council (2016/2017). He got an Assistant Professor position at South Dakota State University starting May 2016.

Research Assistant (1 total)

- **Stephanie Bollmann** (April to October 2013). First author of 1 peer-reviewed research article submitted. She is a collaborator in 2 grants submitted to the NSF (2014) and AFRI NIFA USDA (2015).

Visiting scientists hosted/trained (2 total)

2015

- **Misagh Moridi** (PhD from the Department of Animal Husbandry, University of Guilan, Iran; April –October 2015). First author of a paper in preparation (data generated in Iran but analyzed in my lab). It has participated in 3 different projects and will be co-authors of 3 papers in preparation.

2014

- **Jayant Lohakare** (Assistant Professor, College of Animal Life Sciences, Kangwon National University, Chuncheon, South Korea; August 2014 to Present), first author of a paper in preparation and 1 conference abstract published in the Journal of Dairy Science. He is coauthor of 1 review article published in the Physiological Genomics journal and a research paper in preparation. He is co-PI of a grant submitted (but not funded) to the Agricultural Research Foundation (2014/2015).

v. Team or Collaborative Efforts

2013 – Submitted as PI a Technology Resources Fund proposal in order to develop a Systems Biology course for senior undergraduate and graduate students in collaboration with the Center for Genome Research and Biocomputing at OSU. *Not funded.*

vi. International Teaching

Provided 2 invited lectures at the Southwest University for Nationalities October 2015

2. Student and Participant Evaluation

i. Credit Courses

Summary of student evaluations of teaching (SET)

Class ANS439/539 DAIRY PRODUCTION SYSTEMS Instructor Report 4 credits

			Lecture		Recitation		
	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2013	Fall 2015	Fall 2016
Enrollment	37	13	12	10	37	12	10
Responses (% enrolled)	78	61	50	70	81	42	60
As a whole	3.3	3.5	4.5	4.8	3.2	4.0	4.5
Instructor contribution	3.1	4.0	5.5	4.7	3.3	5.7	5.5
Course objectives	3.1	3.5	4.5	4.8	3.1	4.0	4.5
Clarity of student responsibilities	3.0	3.5	3.0	5.0	3.0	3.3	3.0
Course organization	3.4	3.8	4.0	4.9	3.2	4.3	4.0
Availability	3.3	4.5	4.2	4.0	2.9	5.7	4.2
Accommodate differences	3.0	3.8	3.5	3.8	3.0	5.0	3.5
Instructor's interest	3.9	5.0	5.5	5.0	3.4	5.3	5.5
Stimulate thinking	3.9	4.0	5.5	4.8	3.5	5.7	5.5
Feedback	3.3	3.8	3.5	3.0	3.0	4.0	3.5
Classroom environment	3.6	4.0	4.5	4.3	3.6	5.0	4.5
Evaluation of student performance	3.3	4.2	3.5	4.7	3.5	3.3	3.5
Median	3.3	3.9	4.3	4.6	3.2	4.7	4.3
Median OSU	4.9	5.0	5.1	5.2	4.9	5.1	5.1
% vs. OSU Median	67.3	78.0	84.3	88.5	65.3	92.1	84.3

Lectures ANS438 EXPLORING WORLD AGRICULTURE 2 credits

Recommendation of the speaker (% class) (Spring 2014 only)

Strongly agree	35.5
Agree	41.9
Neutral	16.1
Disagree	0.0
Strongly disagree	3.2
Unanswered	0.0

3. Peer Teaching Evaluation

- Dr. Michelle Kutzler, Associate Professor, Department of Animal and Rangeland Sciences, Fall 2014
- Dr. Claudia Ingham. Senior Instructor, Department of Animal and Rangeland Sciences, Fall 2015

4. Advising

Not required

5. Other Assignments

Collaborative program

Within OSU

- i) Prof. Gerd Boebe, Department of Animal and Rangeland Sciences

Projects:

- Finding markers for disease in dairy cows using lipidomics. *I am involved in bioinformatic analysis and data interpretation.*
- Effect of Intellibond® microminerals on performance and health of dairy cows during the peripartum period. *I am directly involved in experimental design, analyses, data interpretation, and drafting of the papers. I will be corresponding author in any publication. The project is still on the organizational step and is carried out by donations to Dr. Bionaz by Micronutrients.*
- Three projects with Omnigen® supported by the PrinceAgri which are carried out by the co-advised PhD Shelby Armstrong from PrinceAgri. *I am directly involved in helping design 2 out of 3 experiments, I oversee the RT-qPCR analyses, I perform statistical analysis of RT-qPCR data, and I help write and critically evaluate the manuscripts.*

Publications:

- 4 conference abstracts published

Grants submitted:

- 1 Oregon Dairy Council (2015)
- 2 Animal Health and Disease RFP (2014, 2015)
- 1 Oregon Beef Council (2014)
- 1 USDA NIFA HEMS as co-PI (2014). The grant was awarded
- 1 USDA NIFA AFRI Foundational as PI (2014)
- 1 USDA NIFA NNF as co-PI (2013). The grant was awarded
- 1 industry grant (Micronutrient) as co-PI. The grant was awarded

- ii) Prof. Charles Estill, Department of Animal and Rangeland Sciences/ Veterinary Sciences

Projects:

- Study of the role of PPAR γ activation on mastitis and milk fat synthesis in dairy goats. *I am directly involved in experimental design and data interpretation. I will be co-corresponding author in publications. The project was supported by the USDA Animal Health and Diseases.*
- Study of the role of PPAR γ activation on mastitis and milk fat synthesis in dairy goats (redone) and diurnal variation of milk synthesis. *I am directly involved in experimental design and data interpretation. I will be co-corresponding author in publications. The project was supported by the Oregon Beef Council*
- Effect of Intellibond® microminerals on performance and health of dairy cows during the peripartum period. *I am directly involved in experimental design, analyses, data interpretation, and drafting of the papers. I will be corresponding author in any publication. The project is still on the organizational step and is carried out by donations to Dr. Bionaz by Micronutrients.*

Publications:

- 2 conference abstract published
- 1 research article in preparation

Grants submitted:

- 1 USDA NIFA AFRI Foundational grant as PI (2014).
- 2 Animal Health and Disease RFP (2013 and 2014)
- 1 Oregon Beef Council (2015)
- 1 Oregon Dairy Council (2015)
- 1 industry grant (Micronutrient) as co-PI. The grant was awarded

iii) Prof. Gita Cherian, Department of Animal and Rangeland Sciences

Projects:

- Effect on liver metabolism of unsaturated fat fed to growing broilers. *I am a committee member of the MS student from Dr. Cherian responsible for the project. My role in the project is to lead and oversee the RT-qPCR analysis performed in my lab.*

Grants submitted:

- 1 USDA NIFA HEMS as co-PI (2014). The grant was awarded
- 1 USDA NIFA NNF as co-PI (2013). The grant was awarded
- 1 USDA NIFA AFRI Foundational grant as PI (2013). The grant was re-submitted in 2015
- 1 Animal Health and Disease RFP as co-PI (2015)

iv) Prof. Michelle Kutzler, Department of Animal and Rangeland Sciences

Projects:

- Milk and Childhood Obesity: Effect of miRNAs in Raw Cow's Milk on Adipose Stem Cells. *I am the principal investigator in the project supported by the USDA NIFA AFRI*
- Annotation of bovine and swine miRNA. *I am directly involved in providing tissues, data interpretation, and drafting the paper.*

Grants submitted:

- 1 USDA NIFA AFRI Exploratory grant as PI (2014). The grant was awarded
- 1 R03 NIH-NIAMS grant (2013)

v) Prof. David Hendrix, Department of Biochemistry/Biophysics

Projects:

- Milk and Childhood Obesity: Effect of miRNAs in Raw Cow's Milk on Adipose Stem Cells. *I am the principal investigator in the project supported by the USDA NIFA AFRI*
- Annotation of bovine and swine miRNA. *I am directly involved in providing tissues, data interpretation, and drafting the paper.*

Grants submitted:

- 1 USDA NIFA AFRI Exploratory grant as PI (2014). The grant was awarded

vi) Prof. Lisbeth Goddik, Department of Food Science and Technology

Project:

- Acquisition of immune-resistance to urushiol through daily consumption of milk from goat fed poison oak. *I am the principal investigator in the project supported by the Agricultural Research Foundation*

Publications:

- 1 conference abstract published

Grants submitted:

- 2 Agricultural Research Foundation grants as PI (2013 and 2015). The grant of 2013 was awarded

vii) Dr. Claudia Ingham, Department of Animal and Rangeland Sciences

Project:

- Acquisition of immune-resistance to urushiol through daily consumption of milk from goat fed poison oak. *I am the principal investigator in the project supported by the Agricultural Research Foundation*

Publications:

- 1 conference abstract published

Grants submitted:

- 2 Agricultural Research Foundation grants as PI (2013 and 2015). The grant of 2013 was awarded

viii) Prof. Monique Udell, Department of Animal and Rangeland Sciences

Grants submitted:

- 1 USDA NIFA HEMS as co-PI (2014). The grant was awarded
- 1 Oregon Beef Council as co-PI
- 1 Oregon Dairy Council as co-PI

National/International

i) HATCH/MULTI-STATE. Project Title: Mastitis Resistance to Enhance Dairy Food Safety. Project # NE1048 (OSU Project# ORE00133) sponsored by National Institute of Food and Agriculture. From December 2014 to September 2017.

ii) Prof. Juan J Loor, Department of Animal Sciences, University of Illinois at Urbana-Champaign

Projects:

- Study of the role of PPAR γ activation by LCFA in primary cells from mammary goat. *I am directly involved in experimental design and data interpretation. I will be co-corresponding author in publications (1 conference abstract published in the Journal of Dairy Science).*
- Transcriptomics effect of overfeeding or control energy in adipose tissue of peripartum dairy cows. *I am directly involved in bioinformatics analysis and interpretation of the microarray dataset. I will be co-corresponding author in any publication.*

Publications (since starting at OSU):

- 3 review articles (2 invited) published
- 1 research article published
- 2 research articles in preparation

Grants submitted:

- 1 USDA NIFA AFRI Foundational grant as PI (2013). The grant was re-submitted in 2015
- iii) Prof. Matthew B. Wheeler, Department of Animal Sciences, University of Illinois at Urbana-Champaign
Publications (since starting at OSU):
 - 1 research article published
 - 4 manuscripts in preparation
- iv) Prof. Kasey Moyes, University of Maryland
Project:
 - Functional bioinformatic analysis of transcriptomic data in liver and mammary tissue in cows where mastitis was induced by intramammary injection of *E. coli*. *I am directly involved in functional analysis and data interpretation. I am co-corresponding author in the research article submitted to PLoS ONE.***Publication (since starting at OSU):**
 - 1 research article submitted
 - 1 conference abstract published**Grants submitted:**
 - 1 USDA NIFA AFRI Foundational grant as PI (2014)
 - 1 Maryland Agricultural Experiment Station as co-PI (2015)
- v) Prof. Pedram Rezamand, Department of Animal and Veterinary Science, University of Idaho,
Project:
 - Study of the role of PPAR γ activation on mastitis and milk fat synthesis in dairy goats. *I am directly involved in experimental design and data interpretation. I will be co-corresponding author in publications. The project was supported by the USDA Animal Health and Diseases. Dr. Rezamand is tasked with analyzing the 9-cis-retinoic acid in serum of goats.***Grants submitted:**
 - 1 Maryland Agricultural Experiment Station as co-PI (2015)
- vi) Prof. Dr. Jose E.P. Santos, Department of Animal Sciences, University of Florida,
Project:
 - Study of the role of fat in the diet in primiparous and multiparous lactating dairy cows. *I am directly involved in statistical and bioinformatic analysis of microarray data. I also help in data interpretation. I will be co-author in publications.*
- vii) Dr. John Roche, DairyNZ, an industry organization representing New Zealand dairy farmers.
Project:
 - Functional analysis using several bioinformatic tools and data interpretation of several microarray datasets from uterus of dairy cows. *I am directly involved in functional analysis and data interpretation.***Publication (since starting at OSU):**

- 1 research article published

viii) Dr. Dengpan Bu and Dr. Jiaqi Wang, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China

Projects:

- Functional analysis of mRNA and miRNA microarray data in mammary tissue and liver tissue from cows fed a high or low forage/concentrate ration. *I am directly involved in functional analysis and data interpretation and drafting the paper. I will be co-author in the paper.*
- Analysis of differentially expressed genes and miRNA between liver and mammary tissue in dairy cows. *I have proposed and developed the original idea once I got the data and I am directly involved in functional analysis and data interpretation and drafting the paper. I am corresponding authors in the paper.*
- Use of miRNA to correct mRNA data for a reliable analysis of enriched transcription factors of genes differentially expressed between liver and mammary tissue. *The idea of this project is mine and my laboratory developed the algorithm, performed all the analyses, and wrote the manuscript. I will be corresponding author in the paper.*
- Analysis of differentially expressed genes obtained through RNA sequencing in liver and mammary tissue of dairy cows exposed to normal conditions or heat stress. *I am directly involved in functional analysis and data interpretation and drafting the paper. I will be co-author in the paper.*

Publications (since starting at OSU):

- 2 research articles submitted
- 2 research article in preparation

Invited visits:

- I was invited to the 3rd International Symposium on Dairy Cow Nutrition and Milk Quality, May 11-13, 2013 Beijing, China as speaker by Dr. Bu and Dr. Wang.

ix) Prof. Mingfeng Jiang, Sichuan Key Laboratory of Conservation and Utilization of Animal Genetic Resources in Tibetan Plateau, Southwest University for Nationalities, Chengdu City, China

Projects:

- Evaluation of reliable internal control genes for RT-qPCR in yak mammary tissue during lactation. *I have helped analyze the data and written the manuscript. I am co-corresponding author of the paper.*
- Transcriptomic analysis of microarray data of mammary gland during the whole lactation in Yak. *I am directly involved in functional analysis and data interpretation and drafting the papers. I will be co-corresponding author of the paper.*

Publications (since starting at OSU):

- 1 research articles published
- 1 research article in preparation

Invited visits:

- I was invited by Dr. Jang to visit his university and laboratory, give 2 lectures, discuss future collaborative work, and visit yak farms on the Tibetan plateau in October 2015.
- x) Prof. Jun Luo, Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University, Yangling, China
- Project:**
- Study of the control of milk fat synthesis by Sterol regulatory element-binding protein 1 and Liver-X-Receptor in mammary cells of dairy goats. *I am involved in data analysis and interpretation and writing of the paper. I am co-corresponding author in research articles*
- Publications ((since starting at OSU):**
- 1 research article published
 - 1 research article submitted
- xi) Prof. Erminio Trevisi, Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italy
- Study of the role of PPAR γ activation on mastitis and milk fat synthesis in dairy goats. *I am directly involved in experimental design and data interpretation. Dr. Trevisi did the metabolic and inflammatory profiling analysis of the plasma and serum samples and helped to interpret the results. The project was supported by the USDA Animal Health and Diseases.*
 - Study of the role of PPAR γ activation on mastitis and milk fat synthesis in dairy goats (redone) and diurnal variation of milk synthesis. *I am directly involved in experimental design and data interpretation. Dr. Trevisi will do the metabolic and inflammatory profiling analysis of the plasma and serum samples and will help interpreting the results.. The project is supported by the Oregon Beef Council*
 - Effect of Intellibond® microminerals on performance and health of dairy cows during the peripartum period. *I am directly involved in experimental design, analyses, data interpretation, and drafting of the papers. Dr. Trevisi will do the metabolic and inflammatory profiling analysis of the plasma and serum samples and will help interpreting the results. The project is still on the organizational step and will be supported by the Micronutrients (a division of Heritage Technologies).*
- Publications (since starting at OSU):**
- 1 research article published
 - 2 conference abstract published
 - 2 research article in preparation
- Grants submitted:**
- 1 USDA NIFA AFRI Food Security grant as PI (2013).
- xii) Prof. Thorsten Braun, Department of Obstetrics, Charité-Universitätsmedizin, Berlin, Germany
- Projects:**
- Analysis of internal control genes in developing sheep. *I am directly involved in analysis and data interpretation and drafting of the paper. I am a leading author of the published research article with an equal contribution with another author.*

- Analysis of internal control genes in human placenta. *I am directly involved in analysis and data interpretation.*

Publications (since starting at OSU):

- 1 research article published
- 1 conference abstract published
- 1 manuscript in preparation

xiii) Prof. Einar Vargas-Bello-Pérez, Departamento of Ciencias Animales, Pontificia Universidad Católica de Chile, Chile

Grant submitted:

- FONDECYT-Regular research grant, 2015. *I am a collaborator in the grant for data analysis. I have provided a letter of support.*

C. SCHOLARSHIP AND CREATIVE ACTIVITY

Summary of peer-reviewed papers, book chapters, and abstract proceedings published

#/year	Peer-reviewed		Book chapters		Abstracts		Total	
	Total	#/year	Total	#/year	Total	#/year	Total	#/year
Since at OSU	13	3.7	0	0.0	17	5.7	30	9.3
Prior OSU	31	3.9	3	0.4	63	7.9	94	12.1
TOTAL	44	3.8	3	0.3	80	7.3	124	11.3

1. Publications

N.B.: The impact factor reported is the one available at the moment of acceptance of the paper.

At the OSU (total of 30 published, 4 submitted, 9 drafted [i.e., almost ready for submission])

a. Peer-reviewed (total of 13 published, 4 submitted, 8 drafted)

i. Research articles (total of 8 published, 4 submitted, 7 drafted)

Bu, D., **M. Bionaz**, M. Wang, X. Nan, L. Ma and J. Wang. Transcriptome difference and potential crosstalk between liver and mammary tissue in mid-lactation primiparous dairy cows. PLOs ONE

Impact Factor: 3.234

Role: *As co-corresponding authors I had the original idea to study the crosstalk between liver and mammary tissue, I have analyzed the data (both statistical and bioinformatics analyses), interpreted the data, produced all the figures, and I have drafted most of the manuscript. The original datasets used for the analysis was produced in China; thus, this is a collaborative work.*

Moyes, K.M., P. Sørensen, and **M. Bionaz**. 2016. The Impact of Intramammary Escherichia coli Challenge on Liver and Mammary Transcriptome and Cross-Talk in Dairy Cows during Early Lactation using RNAseq. PLOs ONE. 11(6): e0157480

Impact Factor: 3.234

Role: *As co-corresponding authors I had the original idea of studying the interaction between liver and mammary during mastitis. I have performed the bioinformatic analyses, produced most of the figures in the paper, and written most of the results, discussion, and conclusion. I have helped to write the introduction and materials and methods. The original dataset used for the analysis was produced in Denmark; thus, this is a collaborative work.*

Gütling, H., **M. Bionaz**, D. B. Sloboda, L. Ehrlich, A. Plagemann, and T. Braun. 2016. The importance of selecting the right internal control gene to study the effects of antenatal glucocorticoid administration in human placenta. Placenta. 44:19-22

Impact Factor: 2.710

Role: *As co-authors I helped interpreting the data and critically revised the manuscript. The original dataset used for the analysis was produced in Germany; thus, this is a collaborative work.*

Bollmann, S., D. Bu, J. Wang, and **M. Bionaz**. 2015. Unmasking up-stream gene expression regulators with miRNA-corrected mRNA data. Bioinformatics and Biology Insights. 9(S4) 33–48

Impact Factor: N/A

Role: *As corresponding authors I had the original idea, I have written the introduction, most of the results, the discussion, and the conclusion. I have performed the bioinformatics analysis. The original datasets used for the analysis were produced in China; thus, this is a collaborative work.*

Jiang, M., J.N. Lee, **M. Bionaz**, X.Y. Deng, and Y.Wang. Evaluation of Suitable Internal Control Genes for RT-qPCR in Yak Mammary Tissue during the Lactation Cycle. PLoS One. 2016 Jan 25;11(1):e0147705

Impact Factor: 3.234

Role: *As co-corresponding authors I have performed the statistical analysis of qPCR data, run the geNorm analysis, produced the figures in the paper, interpreted the data, substantially helped to write the draft, and critically revised the manuscript. The original data used for the analysis were produced in China; thus, this is a collaborative work.*

Xu H. F., J. Luo, W. S. Zhao, Y. C. Yang, H. B. Tian, H. B. Shi, and **M. Bionaz**. 2015. Overexpression of SREBP1 (sterol regulatory element binding protein 1) promotes de novo fatty acid synthesis and triacylglycerol accumulation in goat mammary epithelial cells. J Dairy Sci 99(1):783-95.

Impact Factor: 2.573

Role: *As co-corresponding authors I have partly written the manuscript, I have performed the analysis of qPCR data and the statistical analysis, and I have interpreted the results. The work was performed in China and this is a collaborative work.*

Bionaz M., E. Monaco, and M. B. Wheeler. Transcription adaptation during in vitro adipogenesis and osteogenesis of porcine mesenchymal stem cells: dynamics of pathways, biological processes, up-stream regulators, and gene networks. 2015. PLOs ONE. Sep 23;10(9):e0137644.

Impact Factor: 3.234

Role: *As first authors I have written the manuscript, I have provides most of the ideas for the development of the paper, and I have interpreted the results. This was part of the work I have done during my post-doc at the University of Illinois at Urbana-Champaign*

Xu, H., **M. Bionaz**, D. B. Sloboda, L. Ehrlich, S. Li, J. P. Newnham, J. W. Dedenhausen, W. Henrich, A. Plagemann, J. R. G. Challis, T. Braun. 2015. The dilution effect and the importance of selecting the right internal control genes for RT-qPCR: a paradigmatic approach in fetal sheep. *BMC Research Notes*, 8:58

Impact Factor: N/A

Role: As shared first authors with a group from Germany lead by Dr. Braun, I have written a good part of the manuscript, I have provides most of the ideas for the development of the paper, and I have interpreted the results.

Shahzad, K., **M. Bionaz**, E. Trevisi, G. Bertoni, S. L. Rodriguez-Zas, J. J. Loor. 2014. Integrative Analyses of Hepatic Differentially Expressed Genes and Blood Biomarkers during the Peripartal Period between Dairy Cows Overfed or Restricted-Fed Energy Parturum. *PLoS One*. Jun 10;9(6):e99757

Impact Factor: 3.73

Role: As co-authors, I have performed the functional analysis of microarray data and interpreted the results. I have written the draft of the manuscript.

Grala, T.M., J.K. Kay, C.V. Phyn, **M. Bionaz**, C.G. Walker, A.G. Rius, R.G. Snell, J.R. Roche. 2013. Reducing milking frequency during nutrient restriction has no effect on the hepatic transcriptome of lactating dairy cattle. *Physiol Genomics* 1;45(23):1157-67

Impact Factor: 2.806

Role: As co-authors, I have performed the functional analysis of microarray data and interpreted the results. I have critically revised the paper.

Hosseini A., R. Sharma, **M. Bionaz**, J. J. Loor. Transcriptomics Comparisons of Mac-T cells Versus Mammary Tissue during Late Pregnancy and Peak Lactation. *Adv Dairy Res* 2013, 1:1

Impact Factor: N/A

Role: As co-corresponding author, I have provided the idea of the study, performed the bioinformatic analyses, interpreted the results, and helped drafting the manuscript. I have edited and submitted the final manuscript.

Akbar, H., **M. Bionaz**, D. B. Carlson, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, J. K. Drackley, and J. J. Loor. 2013. Feed restriction, but not L-carnitine infusion, alters the liver transcriptome by inhibiting sterol synthesis and mitochondrial oxidative phosphorylation and increasing gluconeogenesis in mid-lactation dairy cows. *Journal of Dairy Science*, 96(4):2201-2213.

Impact Factor: 2.463

Role: As co-author, I have performed the functional analysis of microarray data and interpreted the results. I wrote a good part and edited the paper.

Submitted. Xu, H.F., J. Luo, D.Y. Cao, H. Wang, T Y. Zhang, D.W. Yao, H.B. Shi, Z. Chen, H.P. Shi, and **M. Bionaz**. Activation of liver X receptor α promotes fatty acid synthesis in goat mammary epithelial cells via modulation of SREBP1 expression. *Journal of Dairy Science*

Impact Factor: 2.573

Role: As co-corresponding authors I have performed the analysis of qPCR data, run the statistical analysis, produced most of the figures in the paper, interpreted the data, substantially helped to write the draft, and critically revised the manuscript. The original data used for the analysis were produced in China; thus, this is a collaborative work.

Submitted. Osorio J.S. and **M. Bionaz**. Optimization of transfection and real-time monitoring of fluorescent proteins in bovine cells. *Gene*

Impact Factor: 2.319

Role: As corresponding author I have helped to design the experiments, the approach to data analysis, and data interpretation. I critically revised the manuscript.

Submitted. Moridi, M., S.H.H. Moghaddam, S.Z. Mirhosseini, and **M. Bionaz**. Functional and enrichment analysis of blood transcriptome of purebred and crossbred cattle. Journal to be decided

Impact Factor: N/A

Role: Misagh Moridi came to my lab as visiting scholar with the main purpose of learning to perform systems biology analysis on RNAseq data he generated while in Iran. As co-author I have partly provided the means to perform the analysis and I have helped and overseeing the statistical and bioinformatic analysis of the RNAseq data. I helped to interpretation of the data and critically revised the manuscript.

Submitted. da Rosa, F. T., J.S. Osorio, F.Y. Rivera, E. Trevisi, C.T. Estill, and **M Bionaz**. Role of Peroxisome Proliferator-Activated Receptor gamma on subclinical Mastitis in lactating dairy goats. International Journal of Molecular Sciences

Impact Factor: 2.862

Role: As corresponding author I have designed and performed the experiment, overseeing and partly performed the analysis of samples, decided the statistical approach, interpreted the data, and helped to draft and critically revised the manuscript. The experiment was supported by a grant from the USDA Animal Health and Disease RFP (ORE00096) with Dr. Estill as co-PI.

Drafted. Lohakare, J., J.S. Osorio, and **M. Bionaz**. Effects of Peroxisome Proliferator-Activated Receptor β/δ on glucose uptake and lactose synthesis in bovine mammary epithelial cells. Journal to be decided

Impact Factor: N/A

Role: As corresponding author I have designed the experiment, overseeing the analysis of samples, performed the statistical analysis, helped to interpret the data, and critically revised the manuscript.

Drafted. Bionaz, M., T. Jensen, E. Monaco, S. Jain, A.J. Maki, Z. Dymon, and M.B. Wheeler. In vitro osteogenic capacity and in vivo bone healing of porcine freshly isolated adipose-derived stem cells (ASC), CD34+ ASC, and bone marrow-derived stem cells. Journal to be decided

Impact Factor: N/A

Role: As first author I have designed the experiments, run most of the analyses, performed the statistical analysis, produced all the figures, interpreted the data, and wrote the draft of the manuscript. The data were produced during my post-doctorate in University of Illinois at Urbana-Champaign.

Drafted. Bionaz, M., M. Mkrtshjan, A. Ercolin, J.J. Cooper, T. Jensen, R.A.C. Rabel, S.J. Hollister, and M.B. Wheeler. In vitro migration and osteogenesis of adipose-derived stem cells from GFP pigs into Polycaprolactone scaffolds treated with several factors. Journal to be decided

Impact Factor: N/A

Role: As first author I have designed the experiments, run most of the analyses, performed the statistical analysis, produced all the figures, interpreted the data, and wrote the draft of the manuscript. The data were produced during my post-doctorate in University of Illinois at Urbana-Champaign.

ii. Review articles (total of 5 published, 1 Drafted)

Osorio, J.S., J. Lohakare, and **M. Bionaz**. 2016. Biosynthesis of milk fat, protein, and lactose: roles of transcriptional and post-transcriptional regulation. *Physiological Genomics*. 8(4):231-56

Impact Factor: 2.374

Role: *As corresponding author I had the idea of the review and I have written 1 out of the 3 parts of the review plus introduction and conclusion. I have performed analysis of the data and produced 7 out of the 8 presented figures. I have revised and edited the review.*

Bionaz M., J.S. Osorio, and J.J. Loor. 2015. Nutrigenomics in dairy cows: nutrients, transcription factors, and techniques. *J Animal Sci.* Dec;93(12):5531-5553

Impact Factor: 2.108

Role: *This was and invited review. As leading author I am co-corresponding author. I have written most of the review (6 out of 8 sections). I have also edited the review.*

Loor, J. J., M. Vailati-Riboni, J. C. McCann, Z. Zhou, and **M. Bionaz.** 2015. Nutrigenomics in livestock: systems biology meets nutrition. *J Animal Sci.* Dec;93(12):5554-5574

Impact Factor: 2.108

Role: *This was and invited review. I am co-corresponding author. I have written one subsection of the review and critically revised the manuscript.*

Bionaz, M., S. Chen, M. J. Khan and J. J. Loor. 2013. Functional Role of PPARs in Ruminants: Potential Targets for Fine-Tuning Metabolism during Growth and Lactation. *PPAR Research. Special Issue on Physiological and Nutritional Roles of PPAR across Species.* Article ID 684159

Impact Factor: 1.559

Role: *As leading author I am co-corresponding author. I have written the review and proposed a novel hypothesis for fine-tuning the metabolism of dairy cows by activation of the peroxisome-proliferator-activated receptors. I have also edited the review.*

Loor., J.J., **M. Bionaz,** and J. K. Drackley. 2013. Systems Physiology in Dairy Cattle: Nutritional Genomics and Beyond. *Annual Review of Animal Biosciences.* 1: 365-392.

Impact Factor: N/A

Role: *As co-author, I wrote and/or helped to write 14 out of 15 sections of the review. I have also edited the review.*

Drafted. Rubessa, M., **M. Bionaz,** E. Monaco, K. Polkoff, D. Milner, S. Hollister, M. Goldwasser, and M.B. Wheeler. 2016. The Use of the Pig as a Model for Bone Regeneration. *Toxicological Pathology.*

Impact Factor: 2.137

Role: *As co-author I have written 1 out of 8 sections concerning the use transcriptome of porcine mesenchymal stem cells. I have critically revised the whole manuscript.*

b. Editorials (total of 3 published)

Bionaz M., 2014. Nutrigenomics Approaches to Fine-Tune Metabolism and Milk Production: Is This the Future of Ruminant Nutrition? *Advances in Dairy Research.* 2:1.

Impact Factor: N/A

Bionaz M., 2013. What Scientific Journals Can Do to Improve the Peer Review Process: Rewarding the Reviewer! *Journal of Nutritional and Food Sciences.* 3:4.

Impact Factor: N/A

Bionaz M., G. J. Hausman, J. J. Loor, and S. Mandard. 2013. Physiological and Nutritional Roles of PPAR across Species. 807156.

Impact Factor: 1.559

Role: As a leading guest editor of the special issue I have drafted, edited, and I am the corresponding author of the editorial.

c. Book Chapters (total of 0 published, 1 in preparation)

In preparation. **Bionaz M.** Potential role of nutrigenomics in helping preventing periparturient diseases in dairy cows in “Systems Veterinary approaches to transition cow diseases”. Editor Burim Ametaj. Springer Publisher. Invited book chapter.

d. Proceedings abstracts (total of 25)

Sahagun E., J. Bell, J. Belveal, S. Akers, R. Wilson, C. Naito, C. Ingham, L. Goddik, D. Hendrix, D. Jiang, and **M. Bionaz.** Effect of poison oak and pasteurization on miRNA of milk exosomes of goats. FFC's 21st International Conference and Expo on Functional Foods, Functional Foods and Bioactive Compounds in Health and Disease: Science and Practice, March 25-26, 2017, San Diego Convention Center, San Diego, CA, USA

Rosa F., S. Busato, F.C Avaroma, and **M. Bionaz,** J. S. Osorio. 2016 A non-invasive technique to evaluate transcriptional changes in the GI tract of neonatal dairy calves undergoing a mild diarrhea. Symposium on Gut Health in Production of Food Animals

Rosa F., S. Busato, F.C Avaroma, K. Linville, E. Trevisi, and **M. Bionaz,** J. S. Osorio. 2016 Physiological adaptations in the GI tract detected by a fecal RNA method and blood inflammatory biomarkers in neonatal dairy calves undergoing a mild diarrhea. Midwest ADSA-ASAS

Bionaz M and A Nguyen. 2016 The Dynamic Impact Approach as a web-based platform for analysis of time-course or multiple treatments omics datasets for the International Conference on Biological Ontology & BioCreative, Corvallis, OR August 1-4

Rosa F., J. S. Osorio, J. Lohakare, M. Moridi, A. Ferrari, E. Trevisi, and **M. Bionaz.** 2016 Percentages of milk fat, lactose, and protein are affected by diurnal variations in dairy goats. *J. Anim. Sci* Vol. 94, E-Suppl. 5: 410

Rosa F., M. Moridi, J. S. Osorio, J. Lohakare, S. Filley, J. L. Belveal, J. J. Bruton, E. Trevisi, C. Estill, and **M. Bionaz.** 2016 Effect of 2,4-thiazolidinedione treatment in the inflammatory response to induced subclinical mastitis in dairy goats receiving adequate vitamin supplementation. *J. Anim. Sci* Vol. 94, E-Suppl. 5: 341

Armstrong S. A., D. J. McLean, G. Bobe, and **M. Bionaz.** 2016 Effect of OmniGen-AF® dietary supplementation on ultrasound parameters in purebred Angus steers fed a finishing diet. *J. Anim. Sci* Vol. 94, E-Suppl. 5: 110

Armstrong S. A., D. J. McLean, T. H. Schell, G. Bobe, and **M. Bionaz.** 2016 Evaluation of immune function markers in OmniGen-AF® supplemented steers. *J. Anim. Sci* Vol. 94, E-Suppl. 5: 44

Gütling H., **Bionaz M.**, D. M. Sloboda, L. Ehrlich, W. Henrich, A. Plagemann, and T. Braun. 2015. Antenatal glucocorticoid treatment—Validation of internal reference genes in the human placenta. *Placenta*. 36 9:A18

Bionaz M., Ingham C., Belveal J., Gomex K., and M. Keller. 2015. Urushiol is not detected in blood or milk of Saanen dairy goats fed poison oak. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

da Rosa F. T., Osorio J. S., Rivera F. Y., Trevisi E., Estill C. T., and **M Bionaz**. 2015. 2,4-thiazolidinedione improves liver function but does not affect insulin sensitivity and expression of genes in adipose and mammary tissue of lactating dairy goats. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Osorio J. S. and **M Bionaz**. 2015. Optimization of transfection and real-time monitoring of fluorescent proteins in bovine cells: an untapped molecular biology approach for dairy sciences. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Lohakare J., Osorio J. S. and **M Bionaz**. 2015. Peroxisome Proliferator-Activated Receptor β/δ regulates glucose uptake in bovine mammary epithelial cells. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Osorio J. S. and **M Bionaz**. 2015. Palmitate and PPAR γ synthetic agonists but not trans10,cis12-CLA activates PPAR in MacT and primary goat mammary cells. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Zandkarimi F., **M Bionaz**, Stevens J. S., Maier C. S., and G. Bobe. 2015. Phospholipids are potential early risk indicator for retained placenta and mastitis in multiparous dairy cows. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Zandkarimi F., **M Bionaz**, Stevens J. S., Maier C. S., and G. Bobe. 2015. Changes in serum triacylglycerols may indicate disease risk for retained placenta and mastitis in multiparous dairy cows. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Zandkarimi F., **M Bionaz**, Stevens J. S., Maier C. S., and G. Bobe. 2015. Changes in serum non-esterified fatty acids precede retained placenta and mastitis in multiparous dairy cows. *J. Anim. Sci* Vol. 93, E-Suppl. 2/J. Dairy Sci. Vol. 98, E-Suppl. 1

Richards S. G., Robertson L., Dahl D., Johnston L., Estill C. T., and **M Bionaz**. 2014. Effect of 2,4-thiazolidinedione treatment in milk production and leukocytes phagocytosis after sub-clinical mastitis induction in lactating dairy goats. *J. Dairy Sci.* 97(E-Suppl. 1):419-420

Zhao W., **M Bionaz**, Luo J., Hosseini A., and J. J. Loo. 2014. Long chain fatty acids alter expression of genes involved in lipid metabolism in goat mammary epithelial cells partly through PPAR- γ . *J Dairy Sci* 97(E-Suppl. 1):321.

Bionaz M., P. Sørensen and K. M. Moyes. 2014. Cross-talk between liver and mammary tissue after experimental *Escherichia coli* mastitis in Holstein dairy cows using RNAseq. *J Dairy Sci* 97(E-Suppl. 1):420.

Loor J. J. and **M. Bionaz**. 2014. Systems biology and the role of nutrition in coordinating adaptations to lactation. *J Dairy Sci* 97(E-Suppl. 1):391-392.

Bionaz M. and J. J. Loor. 2014. Nutrigenomics in dairy cows. *J Dairy Sci* 97(E-Suppl. 1):391.

Bu, D.P., **M. Bionaz**, X. M. Nan, and J. Q. Wang. 2013. Transcriptomics differences between liver and mammary tissue in mid-lactation dairy cows. *J. Dairy Sci.* Vol. 96, E-Suppl. p. 572

Bionaz M. and J. J. Loor. 2013. Systems Physiology in Cattle: Transcriptome Dynamics and Beyond. **Invited speaker** for the qPCR & NGS 2013 Event, Next Generation Thinking in Molecular Diagnostics, 6th international qPCR & NGS Event Symposium & Industrial Exhibition & Application Workshops, 18 - 22 March 2013, at the Technical University of Munich Physiology-Weihenstephan, Freising-Weihenstephan, Germany.

Bu, D.P., **M. Bionaz**, X. M. Nan, and J. Q. Wang. 2013. Transcriptomics differences between liver and mammary tissue in mid-lactation dairy cows. *Journal of Dairy Science*. In Press.

Than, K.D., S.U. Rahman, **M. Bionaz**, F. La Marca, P. Park, M.B. Wheeler, and C.Y. Lin. A novel model of disc degeneration in Yorkshire swine via a lateral trans-psoas approach and stab injury. Electronic presentation presented at the 2013 Lumbar Spine Research Society Annual Meeting, Chicago, IL, April 11-12, 2013.

e. Non peer-reviewed Publications (total of 4)

i. Proceedings articles (total of 2)

Bionaz M., D. Bu, J. Wang, and J. J. Loor. 2013. Biosynthesis of milk fat and protein: roles of transcriptional and post-transcriptional regulations. **Invited speaker** for the 3rd International Symposium on Dairy Cow Nutrition and Milk Quality, 10-12 May 2013, Beijing, China

Loor J. J. and **M. Bionaz**. 2013. Optimized nutrition in dairy cattle: can systems physiology help? 3rd International Symposium on Dairy Cow Nutrition and Milk Quality, 10-12 May 2013, Beijing, China

ii. Newsletters (total of 2)

Bionaz M., Improving mastitis and milk production by activation of a nuclear receptor: a proof of principle study with a potential important application in dairy cows ration formulation. Oregon Dairy Farm Association Newsletter, November 2013.

Bionaz M., Profile – Dr. Massimo Bionaz, AnRS News December 2012

Prior OSU (only peer-reviewed reported, total of 32)

i. Research articles (total of 28)

Bionaz, M., K. Periasamy, S. L. Rodriguez-Zas, W. L. Hurley, and J. J. Loor. 2012. A Novel Dynamic Impact Approach (DIA) for Functional Analysis of Time-Course Omics Studies: Validation Using the Bovine Mammary Transcriptome. *PLoS ONE* 7(3): e32455.

Impact Factor: 4.411

Role: As leading author I am co-corresponding author. I have invented and developed a novel bioinformatic tool for analysis of omics data in multiple treatments or time course experiments. I analyzed and interpreted the data and written and edited the manuscript

Bionaz, M., K. Periasamy, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, W. L. Hurley, and J. J. Loor. 2012. Old and New Stories: Revelations from Functional Analysis of the Bovine Mammary Transcriptome during the Lactation Cycle. *PLoS ONE* 7(3): e33268.

Impact Factor: 4.411

Role: As leading author I am co-corresponding author. I analyzed and interpreted the data and written and edited the manuscript

Graugnard, D. E., **M. Bionaz**, E. Trevisi, K. M. Moyes, J. L. Salak-Johnson, R. L. Wallace, G. Bertoni, J. K. Drackley, G. Bertoni, and J. J. Loor. 2012. Blood Polymorphonuclear Leukocyte Function and Inflammation Indices in Periparturient Dairy Cows Fed Two Level of Dietary Energy Preparatum. *Journal of Dairy Science*, 95(4):1749-58.

Impact Factor: 2.463

Role: As co-author I have helped with the project and I was tasked to perform the phagocytosis and migration of PMN. I have helped drafting and editing the manuscript

Monaco, E., **M. Bionaz**, S. Rodriguez-Zas, W/ L. Hurley, and M. B. Wheeler. 2012. Transcriptomics Comparison between Porcine Adipose and Bone Marrow Mesenchymal Stem Cells during In Vitro Osteogenic and Adipogenic Differentiation. *PLoS ONE* 7(3): e32481.

Impact Factor: 4.411

Role: As co-author I have performed the bioinformatics analysis and interpreted the data. I have helped drafting and editing the manuscript

Wilson, S. M., M. S. Goldwasser, S. G. Clark, E. Monaco, , **M. Bionaz**, W. L. Hurley, S. L. Rodriguez-Zas, L. Feng, Z. Dymon and M. B. Wheeler. 2012. Adipose-derived mesenchymal stem cells enhance healing of mandible defects in the ramus of swine. *Journal of Oral and Maxillofacial Surgery*, 70(3):e193-203.

Impact Factor: 1.500

Role: As co-author I have performed the statistical analysis, produced the graphs, and helped interpreting the data. I have helped drafting and editing the manuscript

Bionaz, M., B. J. Thering, and J. J. Loor. 2011. Fine metabolic regulation in ruminants via nutrient/gene interactions: saturated long-chain fatty acids increase expression of genes involved

in lipid metabolism and immune response partly through PPAR α activation. British Journal of Nutrition, Jul 6:1-13.

Impact Factor: 3.446

Role: *As co-leading author I have designed and helped to carry out the experiment, analyzed and interpreted the data, and written and edited the manuscript*

Bionaz, M. and J. J. Loor. 2011. Gene networks driving bovine mammary protein synthesis during the lactation cycle. Bioinformatics and Biology Insights, 5:83-98.

Impact Factor: 1.809

Role: *As leading author I have performed the RT-qPCR analysis, I have performed the statistical analysis, produced all the figures, interpreted the data, and written and edited the manuscript*

Piantoni, P., **M. Bionaz**, D. Graugnard, K. M. Daniels, R. E. Everts, S. L. Rodriguez-Zas, H. A. Lewin, W. L. Hurley, R. M. Akers, and J. J. Loor. 2010. Functional genomics and networks analyses of mammary gland parenchyma and fat pad from pre-weaned Holstein calves shed light on cross-talk between the two developing tissues. BMC Genomics, 26;11(1):331.

Impact Factor: 3.759

Role: *As co-author I have proposed the main idea of the paper, performed the bioinformatic analyses, produced the graphs, helped interpreting the data, and helped drafting and editing the manuscript*

Monaco, E., **M. Bionaz**, A. Lima, W. L. Hurley, J. J. Loor, and M. B. Wheeler. 2010. Selection and Reliability of Internal Reference Genes for Quantitative PCR Verification of Transcriptomics During the Differentiation Process of Porcine Adult Mesenchymal Stem Cells. Stem Cell Research & Therapy, 30;1(1):7.

Impact Factor: 3.21

Role: *As co-author I have performed the statistical analysis, produced the graphs, and helped interpreting the data. I have helped drafting and editing the manuscript*

Litherland, N. B., **M. Bionaz**, R. L. Wallace, J. J. Loor, and J. K. Drackley. 2010. Effects of the peroxisome proliferator-activated receptor- α agonists clofibrate and fish oil on hepatic fatty acid metabolism in weaned dairy calves. J. Dairy Sci, 93:2404–2418. **Impact Factor:** 2.463

Role: *As co-author I have run the RT-qPCR analysis and performed the related statistical analysis, produced the graph, and interpreted the data. I have helped drafting the manuscript*

Moyes, K.M., J.K Drackley, D.E. Morin, **M. Bionaz**, S.L. Rodriguez-Zas, R.E. Everts, H.A. Lewin and J.J. Loor. 2009. Gene network and pathway analysis of bovine mammary tissue challenged with *Streptococcus uberis* reveals induction of cell proliferation and inhibition of PPAR-gamma signaling as potential mechanism for the negative relationships between immune response and lipid metabolism. BMC Genomics. 10: 542.

Impact Factor: 3.759

Role: *As co-author I have performed the bioinformatic analyses and helped interpreting the data and drafting the manuscript.*

Mukesh, M., **M. Bionaz**, D. E. Graugnard, J. K. Drackley, and J. J. Loor. 2010. In Vitro Responses of Inflammatory Gene Expression in Adipose Tissue Depots of Holstein Cows. Domest Anim Endocrinol. Apr;38(3):168-78.

Impact Factor: 1.651

Role: *As co-author I have designed and helped to carry out the experiment and analyses, performed the statistical analysis, produced all the figures, and helped interpreting the data and drafting the manuscript.*

Kadegowda, A.K.G., **M. Bionaz**, L.S. Piperova, R.A. Erdman, and J.J. Loor. 2009. Long-chain fatty acids regulate lipogenic gene networks in bovine mammary epithelial cells through PPAR γ -dependent and independent mechanisms: implications for regulation of milk fat synthesis. *J. Dairy Sci*, 92:4276–4289.

Impact Factor: 2.463

Role: As co-author I have designed and helped to carry out the experiment and assays, performed the statistical analysis, produced most of the figures, and helped interpreting the data and drafting the manuscript.

Monaco, E., A. Lima, **M. Bionaz**, A. Makia, W.L. Hurley, and M.B. Wheeler. 2009. Morphological and Transcriptomic Comparison of Adipose and Bone Marrow Derived Porcine Stem Cells. *Journal of Tissue Engineering and Regenerative Medicine*, 2:20-33.

Impact Factor: 3.857

Role: As co-author I have performed the statistical analysis, helped to produce the figures, and helped interpreting the data and drafting the manuscript.

Thering, B. J., **M. Bionaz**, J. J. Loor. 2009. Long-Chain Fatty Acid Effects on PPAR α -Regulated Genes in Madin-Darby Bovine Kidney Cells: Optimization of Culture Conditions using Palmitate. *J. Dairy Sci*, 92:2027-2037.

Impact Factor: 2.463

Role: As co-author I have designed and helped to carry out the experiment and assays, performed the statistical analysis, produced the figures, and helped interpreting the data and drafting the manuscript.

Kadegowda, A. K. G., **M. Bionaz**, Thering, B. J., L. S. Piperova, R. A. Erdman, and J. J. Loor. 2009. Identification of Internal Controls for Quantitative PCR in Mammary Tissue of Lactating Cows Receiving Lipid Supplements. *J. Dairy Sci*, 92(5):2007-2019.

Impact Factor: 2.463

Role: As co-author I have performed the statistical analysis, helped to produce the figures, and helped interpreting the data and drafting the manuscript.

Graugnard, D. E., P. Piantoni, **M. Bionaz**, L. L. Berger, D. B. Faulkner, J. J. Loor. 2009. Adipogenic and energy metabolism gene networks in *longissimus lumborum* during rapid post-weaning growth in Angus and Angus x Simmental cattle fed high- or low-starch diets. *BMC genomics*, 10:142.

Impact Factor: 3.759

Role: As co-author I have performed the statistical analysis, helped to produce the figures, and helped interpreting the data and drafting the manuscript.

Bertoni, G., E. Trevisi, X. Han, and **M. Bionaz**. 2008. Effects of inflammatory conditions on liver activity in puerperium period and consequences for performance in dairy cows. *J Dairy Sci* 91(9):3300-3310.

Impact Factor: 2.463

Role: As co-author I have performed the statistical analysis, produce the figures, helped interpreting the data, and helped drafting and editing the manuscript.

Tramontana, S., **M. Bionaz**, A. Sharma, D. E. Graugnard, E. A. Cutler, P. Ajmone-Marsan, W. L. Hurley, and J. J. Loor. 2008. Internal controls for quantitative polymerase chain reaction of swine mammary glands during pregnancy and lactation. *J Dairy Sci* 91(8):3057-3066.

Impact Factor: 2.463

Role: As co-author I have performed the statistical analysis, produced the figures, and helped interpreting the data and drafting the manuscript.

Bionaz, M. and J. J. Loor. 2008. Gene networks driving bovine milk fat synthesis during the lactation cycle. *BMC Genomics* 9:366.

Impact Factor: 3.759

Role: *As leading author I have performed the RT-qPCR analysis, I have performed the statistical analysis, produced all the figures, interpreted the data, and written and edited the manuscript*

Bionaz, M. and J. J. Loor. 2008. ACSL1, AGPAT6, FABP3, LPIN1, and SLC27A6 are the most abundant isoforms in bovine mammary tissue and their expression is affected by stage of lactation. *J Nutr* 138(6):1019-1024.

Impact Factor: 4.091

Role: *As leading author I have performed the RT-qPCR analysis, I have performed the statistical analysis, produced all the figures, interpreted the data, and written and edited the manuscript*

Piantoni, P., **M. Bionaz**, D. E. Graugnard, K. M. Daniels, R. M. Akers, and J. J. Loor. 2008. Gene expression ratio stability evaluation in prepubertal bovine mammary tissue from calves fed different milk replacers reveals novel internal controls for quantitative polymerase chain reaction. *J Nutr* 138(6):1158-1164.

Impact Factor: 4.091

Role: *As co-author I have performed the statistical analysis, helped to produce the figures, and helped interpreting the data and drafting the manuscript.*

Bionaz, M., C. R. Baumrucker, E. Shirk, J. P. V. Heuvel, E. Block, and G. A. Varga. 2008. Characterization of Madin-Darby bovine kidney cell line for peroxisome proliferator-activated receptors: Temporal response and sensitivity to fatty acids. *J Dairy Sci* 91(7):2808-2813.

Impact Factor: 2.463

Role: *As leading author I have designed the experiment, performed the RT-qPCR analysis, performed the statistical analysis, produced all the figures, interpreted the data, and written and edited the manuscript*

Bionaz, M. and J. J. Loor. 2007. Identification of reference genes for quantitative real-time PCR in the bovine mammary gland during the lactation cycle. *Physiological Genomics* 29(3):312-319.

Impact Factor: 3.931

Role: *As leading author I have performed the RT-qPCR analysis, performed the statistical analysis, produced all the figures, interpreted the data, proposed the idea of dilution effect, and written and edited the manuscript*

Loor, J. J., R. E. Everts, **M. Bionaz**, H. M. Dann, D. E. Morin, R. Oliveira, S. L. Rodriguez-Zas, J. K. Drackley, and H. A. Lewin. 2007. Nutrition-induced ketosis alters metabolic and signaling gene networks in liver of periparturient dairy cows. *Physiological Genomics* 32(1):105-116.

Impact Factor: 3.931

Role: *As co-author I have helped to perform and interpret the bioinformatic analysis, and helped drafting the manuscript.*

Bionaz, M., E. Trevisi, L. Calamari, F. Librandi, A. Ferrari, and G. Bertoni. 2007. Plasma paraoxonase, health, inflammatory conditions, and liver function in transition dairy cows. *J Dairy Sci* 90(4):1740-1750.

Impact Factor: 2.463

Role: *As leading author I have performed the experiment, run the analyses, performed the statistical analysis, produced all the figures, interpreted the data, and written and edited the manuscript*

Dann, H. M., N. B. Litherland, J. P. Underwood, **M. Bionaz**, A. D'Angelo, J. W. McFadden, and J. K. Drackley. 2006. Diets during far-off and close-up dry periods affect periparturient metabolism and lactation in multiparous cows. *J Dairy Sci* 89(9):3563-3577.

Impact Factor: 2.463

Role: *As co-author I have performed the analysis of triglycerides in liver and critically revised the manuscript.*

Trevisi, E., **M. Bionaz**, F. Piccioli-Cappelli, and G. Bertoni. 2006. The management of intensive dairy farms can be improved for better welfare and milk yield. *Livestock Science* 103(3):231-236.

Impact Factor: 1.410

Role: *As co-author I have carry out the experiment, helped to interpret the data, and helped drafting the manuscript.*

iii. Review articles (total of 4)

Loor, J. J., **M. Bionaz**, and J. K. Drackley. 2013. Systems Physiology in Dairy Cattle: Nutritional Genomics and Beyond. *Annual Review of Animal Biosciences*. 1:1:365-92

Bionaz M., J. J. Loor. 2012. Ruminant metabolic systems biology: reconstruction and integration of transcriptome dynamics underlying functional responses of tissues to nutrition and physiological state. *Gene regulation and systems biology*. 6:109-125.

Impact Factor: 1.190

Role: *As leading author I got the idea for the review (Dr. Loor was invited to give a talk and write a review), I have run the bioinformatics analyses, produced all the figures, interpreted the data, and written and edited the manuscript*

Loor, J. J., K. M. Moyes, and **M. Bionaz**. 2011. Functional adaptations of the transcriptome to mastitis-causing pathogens: the mammary gland and beyond. *Journal of Mammary Gland Biology and Neoplasia*. 16:305–322.

Impact Factor: 5.446

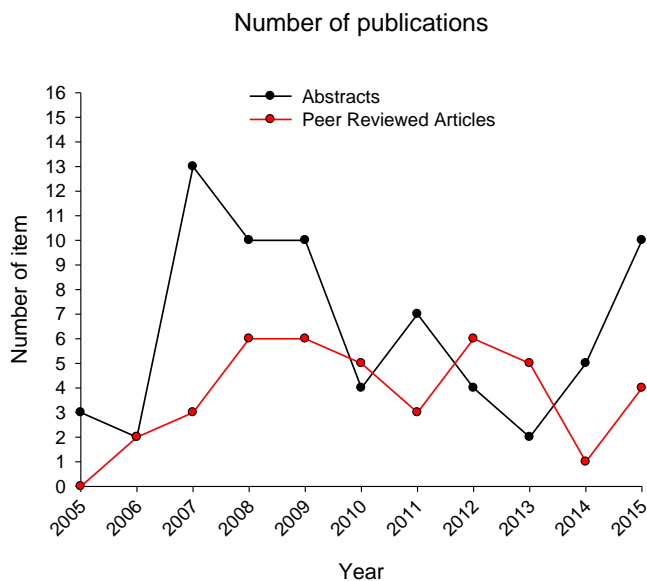
Role: *As co-author (Dr. Loor was invited to write a review), I have run the bioinformatics analyses, produced all the figures, interpreted the data, and written 4 out of the 5 sections, and helped to write the introduction and perspective section of the manuscript.*

Monaco, E., **M. Bionaz**, S. J. Hollister, and M. B. Wheeler. 2010. Strategies for regeneration of the bone using porcine adult adipose-derived mesenchymal stem cells. *Theriogenology*. May;75(8):1381-99.

Impact Factor: 2.073

Role: *As co-author (Dr. Wheeler was invited to write a review), I have run the bioinformatics analyses, produced all the figures, interpreted the data, written 2 out of 4 sections and helped to write the conclusion and edit the manuscript*

Summary of scientific impact through publications



By February 2017:

- 48 peer-reviewed articles
 - 40 research articles
 - 8 reviews
- 3 book chapters
- 3 editorials
- 86 conference abstracts
- 18 non peer-reviewed

Summary from web-sites specialized to capture scientific impact

Google Scholar (visited 02/27/2017) <https://scholar.google.com/>

	All	Since 2012
<u>Citations</u>	2,861	2,272
<u>h-index</u>	25	22
<u>i10-index</u>	42	38

ISI Web of Science (visited 02/27/2017)

Results found:	90
Sum of the Times Cited:	1,732
<i>without self-citations:</i>	<i>1,573</i>
Citing Articles:	1,109
<i>without self-citations:</i>	<i>1,073</i>
Average Citations per Item:	19.24
h-index:	21

ResearchGate (visited 02/27/2017) www.researchgate.net

Publications:	238
Reads:	9,333
Citations:	2,591
Profile views:	1,291
Followers:	173
Impact Points:	157.97
RG Score:	34.53 (higher than 92.5% of ResearchGate members).
h-index:	24

Academia (visited 03/01/2016) <http://www.academia.edu/>

Followers:	136
Total Views:	6,326 (24.8% USA, 5.8% India, 5.5% Italy, 3.2% China)
Top 5% in the Academia	
In the last 60 days:	

- 14 profile views
- 139 document views
- 120 unique visitors

i. **Presentation to peers**

Summary table of presentations to peers at professional meetings since at OSU

Year	Within region	National	International	TOTAL	# Invited
2017					
2016	1	0	0	1	0
2015	0	0	2	2	2
2014	0	2	0	2	2
2013	1	0	2	3	3
TOTAL	1	2	4	8	7

i. List of national presentations and those invited

Year	Title of talk	Meeting	Location	# attending	Invited
2014	The power of transcriptome and bioinformatics to uncover bovine mammary biological adaptation to lactation, nutrients, mastitis, and tissue cross-talk	USDA: National Animal Disease Center	Ames, Iowa	~50	Yes
2013	Nutrigenomics in Dairy Cows	CGRB 2013 Fall Conference	OSU	~100	Yes

ii. List of international presentations and those invited

Year	Title of talk	Meeting	Location	# attending	Invited
2015	Systems Biology and Nutrigenomics in Lactating Ruminants	Invited seminar	Southwest University for Nationalities, Chengdu , Sichuan, China	~30	Yes
2015	Real time Polymerase Chain Reaction: basics and methods	Invited lecture	Southwest University for Nationalities, Chengdu , Sichuan, China	~20	Yes
2014	Nutrigenomics in dairy cows	Triennial Lactation Symposium/BOLFA	Kansas City, MO	~200	Yes
2013	Systems Physiology in Cattle: Transcriptome Dynamics and Beyond	6th international qPCR & NGS Event Symposium & Industrial Exhibition & Application Workshops	Technical University of Munich Physiology-Weihenstephan, Germany	~450	Yes
2013	Biosynthesis of milk fat and protein: roles of transcriptional and post-transcriptional regulations.	3rd International Symposium on Dairy Cow Nutrition and Milk Quality	Beijing, China	~500	Yes

ii. **Grant and contract support**

Awarded

Year	PI(s)	Agency	Type	Title	\$ Tot. requested	\$ to my program	Status
2016	<i>Lead PI</i>	ARF	Oregon Beef Council	Increasing milk production in bovine mammary cells: a nutrigenomic strategy	16,000	10,000	Ongoing
2016	G. Bobe <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2017-2019	Effect of Selenium-enriched hay fed to dairy cows during the dry period on the immunity of calves	12,500	12,500	Ongoing
2016	<i>Lead PI</i>	ARF	Oregon Beef Council	An in vivo-in vitro hybrid system to perform nutrigenomic studies in cattle: validation using peripartum cows	16,000	10,000	Ongoing
2015	J. Osorio <i>Lead PI</i>	ARF	Oregon Beef Council	An in vivo-in vitro hybrid system to perform nutrigenomic studies in cattle: validation using peripartum cows	20,000	10,000	Ongoing
2016	B. Philmus <i>Lead PI</i>	OSU	RERF	High Performance Liquid Chromatography with dual UV and Fluorescence capability	53,371	53,371	Completed
2015	JS Osorio <i>Co-PI</i>	USDA/ NIFA	2015 Animal Health and Disease RFP	Noninvasive stool-based isolation of gastrointestinal epithelial cells from neonatal dairy calves for use in transcriptome profile	11,700	11,700	Completed
2014	G Bobe G Cherian J Hermes M Udell <i>Co-PI</i>	USDA NIFA HEMS	Higher Education Multicultural Scholars Program (MSP)	Multicultural Young Scholars Training in Animal and Rangeland Sciences (MYSTARS)	200,000	40,000	Ongoing
2014	M Kutzler D Hendrix <i>Lead PI</i>	USDA NIFA	AFRI, Grant Foundational Program: Exploratory	Milk and Childhood Obesity: Effect of miRNAs in Raw Cow's Milk on	100,000	70,000	Ongoing

Curriculum Vitae **Dr. Massimo Bionaz**

2014	<i>Lead PI</i>	ARF	Grant Oregon Beef Council	Adipose Stem Cells Modulation of milk fat synthesis in dairy animals: a nutrigenomics approach	14,500	14,500	Completed
2014	<i>Lead PI</i>	OSU	URSA Engage 2015	Development of the Dynamic Impact Approach, a web-interface bioinformatics tool for functional analysis of transcriptomics and proteomics datasets	1,500	1,500	Completed
2013	L Goddik C Ingham R Solensky <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2014-2016	Acquisition of immune-resistance to urushiol through daily consumption of milk from goat fed poison oak	12,500	12,500	Completed
2013	C Gita G Bobe R Cooke <i>Co-PI</i>	USDA NIFA NNF	Higher Education National Needs Fellowships Program (NNF) 2013	Training the Next Generation of Scientists for the Systems Biology Era in Animal Production	238,500	59,625	Ongoing
2013	<i>Lead PI</i>	OSU	Faculty Internationalization Grant	Invited talk to Chinese Dairy Symposium 2013	2,500	2,500	Completed
2013	C Estill <i>Lead PI</i>	USDA/ NIFA	2013 Animal Health and Disease RFP	Role of Peroxisome Proliferator-Activated Receptor gamma on prevention/cure of Mastitis	34,490	34,490	Completed

Pending

Year	PI(s)	Agency	Type	Title	\$ Tot requested	\$ my program
2017	<i>Lead PI</i>	OSU	Small Grants Program	Creation of isotype-specific peroxisome proliferator-activated receptors bovine cells for nutrigenomic studies	7,000	7,000

Not awarded

Curriculum Vitae Dr. Massimo Bionaz

Year	PI(s)	Agency	Type	Title	\$ Tot. requested	Score	# subm/ % succ
2016	G. Bobe <i>Lead PI</i>	USDA/ NIFA	2017 Animal Health and Disease RFP	Liver activity and mammary macrophages in transition dairy cows fed selenium- enriched hay	32,000	Do not fund	
2016	G. Bobe <i>Lead PI</i>	ARF	Oregon Beef Council	Effect of hay- enriched selenium on immunity and gene expression in dairy cows and theirs calves	22,000	Do not fund	
2016	G Bobe C Estill KM Moyes <i>Lead PI</i>	USDA NIFA	AFRI, Grant Foundational Program	Mastitis prevention and treatment in lactating dairy cows by activation of Peroxisome Proliferator- Activated Receptor gamma	499,927	Medium Priority	68/16.1 %
2016	C. Estill A. Menino <i>Lead PI</i>	ARF	Oregon Dairy Farm Assoc.	Improving fertility in dairy animals by nutrigenomic approach: a proof of principle experiment	22,000	Do not fund	
2016	G Cherian JJ Loor <i>Lead PI</i>	USDA- NIFA	AFRI, Grant Foundational Program	Nutrigenomics in dairy cattle: transcription factors networks for the transcriptome response to fatty acids	2016	Do not fund	101/ 16%
2016	B. Kronmiller <i>Lead PI</i>	USDA NIFA	AFRI, Grant Foundational Program	Dynamic Impact Approach Tool for Improved Analysis and Visualization of Multiple Condition Omics Experiments	2016	Second upper quartile	25%
2016	D. Hendrix C. Ingham L. Goddik J Waite-Cusic J. Duo R. Solensky <i>Lead PI</i>	Industry	Illumina Grant through CGRB	Milk and Childhood Obesity: Effect of miRNAs in Raw Cow's Milk on Adipose Stem Cells	N/A	N/A	N/A
2016	D. Hendrix M. Kutzler J. Duo	Industry	Illumina Grant through CGRB	Effect of feeding poison oak on goat's milk miRNA	N/A	N/A	N/A

Curriculum Vitae **Dr. Massimo Bionaz**

2015	M Udell G Bobe <i>Co PI</i>	ARF	Oregon Dairy Council	Can an Enriched Socialization Strategy Reduce Stress and Increase the Productivity of Dairy Cows?	21,524	No score provided	N/A
2015	L Goddik C Ingham; R Solensky JG Waite-Cusic <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2016-2018	Acquisition of immune-resistance to urushiol through daily consumption of milk from goat fed poison oak: addendum	12,500	No score provided	N/A
2015	TW Downing <i>Lead PI</i>	ARF	Oregon Dairy Council	Grazing vs. TMR: effect on physiology, immune system, and performance of peripartum dairy cow	28,000	No score provided	N/A
2015	C Estill TW Downing <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2016-2018	Are organic dairy cows in good welfare status? Assessment using metabolomics and an integrated welfare system approach	12,500	No score provided	N/A
2015	K Moyes (UM) <i>Co-PI</i>		Maryland Agricultural Experiment Station	The effect of nutrient supply on metabolic and inflammatory responses of bovine mammary epithelial cells after inflammatory challenge in vitro	29,639	No score provided	N/A
2015	G Cherian JJ Loor JS Osorio <i>Lead PI</i>	USDA-NIFA	AFRI, Grant Foundational Program	Nutrigenomics in dairy cattle: transcription factors networks for the transcriptome response to fatty acids	499,196	Low Priority	N/A/ 16%
2015	G Bobe <i>Lead PI</i>	USDA/NIFA	2015 Animal Health and Disease RFP	Development of an In Vitro System to Study Microbiome-Host Crosstalk Using Bovine Mastitis as Model	35,000	N/A	N/A
2015	G Cherian <i>Co-PI</i>	USDA/NIFA	2015 Animal	Early Diet as a Target for	11,000	N/A	N/A

			Health and Disease RFP	Controlling Cardiac Diseases in Meat-Type Broiler Chickens			
2015	F Chaplen L Sayavedra-Soto G Murthy C Higgins D Blunck T Downing <i>Co-PI</i>	USDA/ NIFA	USDA AFRI Climate Variability and Change	Development of LCA Tools to Evaluate Management Alternatives for Reducing GHG Emissions from Livestock Production Systems: Multi-Scale Integration of Constraints-Based Process Models of Soil Microbial Communities Involved in GHG Emissions	2,996,120	Low Priority	N/A/ 24%
2014	C Estill G Bobe <i>Lead PI</i>	USDA/ NIFA	2014 Animal Health and Disease RFP	Effect of OmniGen-AF on mastitis response in dairy cows	30,000	N/A	N/A
2014	G Bobe C Estill KM Moyes <i>Lead PI</i>	USDA NIFA	AFRI, Grant Foundational Program	Mastitis prevention and treatment in lactating dairy cows by activation of Peroxisome Proliferator-Activated Receptor gamma	495,362	Medium Priority	222/ 8%
2014	<i>Lead PI</i>	USDA NIFA	AFRI, Grant Foundational Program	Dynamic Impact Approach Tool for Improved Analysis and Visualization of Multiple Condition Omics Experiments	499,321	Medium Priority	51/ 8%
2014	M Udell G Bobe <i>Co-PI</i>	ARF	Oregon Beef Council	Can an Enriched Socialization Strategy Reduce Stress and Increase the Productivity of Dairy Cows?	15,000	No score provided	No score provided
2014	JS Osorio <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2015-2017	Use of in vitro molecular approaches to unravel the potential of nutrigenomics to improve lactation	11,800	No score provided	No score provided

Curriculum Vitae **Dr. Massimo Bionaz**

2014	J Lohakare <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2015-2017	performance and health in dairy cows PPAR β/δ regulation of lactose production in bovine mammary cells: a nutrigenomics strategy to improve milk production in dairy animals	12,500	No score provided	No score provided
2014	<i>Lead PI</i>	OSU	URSA Engage 2015	Use of milk from poison oak to acquire immune- resistance to poison oak	1,500	No score provided	No score provided
2013	G Cherian JJ Loor <i>Lead PI</i>	USDA- NIFA	AFRI, Grant Foundational Program	Nutrigenomics in dairy cattle: transcription factors networks for the transcriptome response to fatty acids	496,785	Medium Priority- Lower	211/ 15%
2013	S Bollmann S O'Neil <i>Lead PI</i>	OSU	Technolog y Resources Fund (TRF)	Development of a systems biology course and a web- interface bioinformatics tool for hands-on learning activities	83,560	No score provided	No score provided
2013	TW Downing L Calamari E Trevisi <i>Lead PI</i>	USDA- NIFA	AFRI, Food Security	Development of an Integrated Diagnostic System Welfare to assess and improve well- being of dairy cows and reduce diseases and animal losses	962,203	Do Not Fund	60/ 10.7%
2013	M Kutzler <i>Lead PI</i>	NIH- NIAMS	Small Grant Program For New Investigators (R03)	Effect of feeding milk on stem cells involved in bone growth and regeneration	219,000	No received a score (SRG++)	N/A
2013	<i>Lead PI</i>	NSF	Advances in Biological Informatics (ABI)	Dynamic Impact Approach Tool for Improved Analysis and Visualization of Multiple Condition Omics Experiments	795,399	Not Competitive	N/A
2013	<i>Lead PI</i>	ARF	Oregon Beef Council	Effect of peroxisome proliferator-	43,350	No score provided	No score provided

2013	C Maier <i>Lead PI</i>	ARF	ARF - Competitive Grant Program 2014-2016	activated receptor gamma activation in post-partum dairy cows: a pilot study Effect of PPAR gamma activation in combination with induced mastitis in dairy goats: a holistic metabolic and gene expression approach	12,500	No score provided	No score provided
2013	<i>Lead PI</i>	AJCC	Grant Proposal 2013	Grape Pomace as alternative to corn silage to feed Jersey Cows	5,700	No score provided	No score provided

Pre-proposal submitted

Year	PI(s)	Agency	Type	Title	\$ Tot. requested	\$ to my program	Status
2016	<i>PI</i>	Balchem	Industry	Development of a high-throughput in vitro system to study nutrigenomic effect of long-chain fatty acids on bovine cells	150,000	97,700	Rejected
2016	M. Udell P Ji <i>Co-PI</i>	National Dairy Council	Childhood Nutrition	Effect of cow milk consumption on brain development and cognition	415,139	400,000	Rejected
2016	B. Philmus G. Bobe C. Häse, <i>Lead PI</i>	NSF	EAGER	Development of an In Vitro System to Study Microbes-Host Biochemical Crosstalk	N/A	N/A	Rejected

Summary of grants

	Non-federal	Federal	All
Total submitted	31	14	45
2016	6	3	9
2015	10	2	12
2014	7	4	11
2013	8	5	13
Total awarded	10	3	13
2016	3	0	3
2015	2	0	2
2014	2	2	4
2013	3	1	4
Total awarded as PI	8	1	9
2016	3	0	3
2015	1	0	1
2014	2	1	3
2013	2	0	2
% success	32.3	21.4	28.9
2016	50.0	0.0	33.3
2015	20.0	0.0	16.7
2014	28.6	50.0	36.4
2013	37.5	20.0	30.8
\$ awarded	178,561	428,500	607,061
2016	81,871	0	81,871
2015	46,200	0	46,200
2014	16,000	190,000	206,000
2013	48,990	238,500	287,490
\$ to my program*	162,561	169,625	332,186
2016	81,871	0	81,871
2015	46,200	0	46,200
2014	16,000	110,000	126,000
2013	48,990	59,625	108,615

* Not including overhead

iii. **Patents, awards and inventions**

Prior OSU (total of 2, 1 not awarded and 1 pending)

Patent title: Dynamic Impact Approach Analysis of Transcriptome to Uncover and Visualize most Impacted Biological Pathways and Biological Functions in Time Course Experiments
Provisional patent submitted; Disclosure filed: 29 August 2011. *Not anymore under consideration.*

Patent title: Coagulated Blood as a Method to Load Cells Onto/Into Tissue Engineering Scaffolds
Disclosure submitted; Disclosure filed: 2 April 2012. *Pending*

iv. **Other information appropriate to the discipline**

a) **Professional societies membership** (total of 3)

American Dairy Science Association (2005-present) Member #49024

The American Society for Nutrition (2006-present)

International Society for Stem Cell Research (2009-2012)

b) **Professional development**

Date	Name/title	Location	Type	Presented
2017	Journey into Leadership	OSU	Workshop	Discussion
2016	ADSA Large Dairy Herd Management – May 1-6	Chicago (IL)	Conference/workshop	No
2016	CAS Situational Leadership for Research Lab Managers	OSU	Workshop	Discussion
2015	Fierce Conversation	OSU	Workshop	No
2015	Invitation to sack-lunch	OSU	Workshop	Discussion
2015	CAS Situational Leadership for Research Lab Managers	OSU	Workshop	No
2014	Search Advocate workshop	OSU	Workshop	No
2014	CAS Grant Writing Workshop	OSU	Workshop	No
2014	Make your Talk TED-Worthy	Kansas City (MO)	Workshop	Yes
2014	Mentoring 101: How to Get What You Need to Thrive in the Academy	OSU	Workshop	No
2014	Spring panel on Promotion and Tenure	OSU	Workshop	No
2014	CAS Grant Workshop Series	OSU	Workshop	Yes
2013	NCCC-170 FASS Mixed Model Workshop	Indianapolis (IN)	Workshop	No
2013	New Employee Orientation sessions	OSU	Workshop	No
2013	Annual Dairy Media Training	OSU	Workshop	Discussion
2013	Diet and Optimum Health	OSU	Conference	No
2013	Fireside Chat series for any first generation PhDs	OSU	Meeting	Discussion
2013	Media Training from the Extension and Experiment Station Communications department	OSU	Workshop	Yes
2013	Teaching and Learning Symposium	OSU	Symposium	No
2013	EMT Research Day 2013	OSU	Conference	No

D. SERVICE

1. University Service

i. Department/unit

- Invited Dr. Kasey Moyes for a research seminar and an extension seminar at the OSU (22-23 April 2013)
- Proposed and started the “Assistant Professor meeting” in the Animal and Rangeland Sciences Department, with a peer-mentoring purpose

ii. University

- Invited to talk about the peer-mentoring Assistant Professor group at the Animal and Rangeland Sciences department by Dean Daniel Arp at the Mentoring New Faculty administrator meeting, CH2MHill Alumni Center, 11/03/2015
- Participated to the OSTP Seeking Feedback on Microbiome Research, 6/8/2015
- Member of the ARCS College of Agricultural Sciences Selection Committee (2014- to present)
- Participation to the strategic intent conversation (9/18/2013)
- Part of the committee for the Curriculum Task Force for developing a bioinformatics/systems biology program for graduate and undergraduate at OSU (Brett Tyler is the initiator/coordinator)
- Be interviewed as a reviewer for the NSF Graduate Research Fellowship during two-day workshop (October 2014; May 2015; October 2015; May 2016)

2. Service to the Profession

i. P&T Dossier review (from peer institutions)

Not yet

ii. Other services to peers

Filled a third year review questionnaire for Dr. Duo Jiang, Department of Statistic

iii. Grant panels

At OSU

- Nebraska Food for Health Initiative Proposal Review (2016)
- Panelist on the Molecular & Developmental Biology panel for the 2014 and 2015 NSF Graduate Research Fellowship Program
- Panelist on the Physiology, Organismal & Developmental Biology panel for the 2015 and 2016 NSF Graduate Research Fellowship Program
- Partner University Fund (US-French PUF project), 2013

Prior OSU

- U.S.-Israel Binational Science Foundation. 2012

iv. Offices/roles in professional societies

- Reviewer for abstracts submitted for the Physiology and Endocrinology session for the 2017 American Dairy Science Association annual meeting
- Judge for graduate poster competition, Graduate Student poster Competition, Joint ADSA/ASAS meeting, Salt Lake City, UT, 2016
- Secretary for the Mastitis Workers 2016; NE-1048 Multistate Grant

v. Editor or Assoc. Editor of Journal

- 1) Guest Editor for the Special Issue on “Current developments in domestic animal bioinformatics” for *Bioinformatics and Biology Insights* journal (2014-2016)

- 2) Guest Editor of the Special Issue “Omics strategies to study lactation in livestock for a holistic and integrated view” for *Frontiers in Genetics Research* journal (2014-2015)
- 3) Editorial Board Member – *Journal of Advances in Dairy Research* (2013 to present)
- 4) Editorial Board Member -*Journal of Nutrition and Food Sciences* (2012 to present)
- 5) Editorial Board Member - *Conference Papers in Molecular Biology* (2012 to 2015)
- 6) Editorial Board Member – *Physiological Genomics* (2013 to 2014)
- 7) Lead Guest Editor of the Special Issue on ‘Physiological and nutritional roles of PPAR across species’ for *PPAR Research* journal (2012/2013)

vi. Papers reviewed

At OSU (total 38)

Journal of Dairy Science (9 papers)
Physiological Genomics (8 papers)
Journal of Animal Science (3 papers)
The Scientific World Journal (2 papers)
Animal Feed Science and Technology (1 paper)
Annual Research & Review in Biology (1 paper)
British Journal of Nutrition (1 paper)
Czech Journal of Animal Science (1 paper)
Gene (1 paper)
PLoS ONE (1 paper)
Proteome Science (1 paper)
Molecular Genetics and Genomics (1 paper)
Animal Biotechnology (1 paper)
PPAR Research (1 paper)
BMC Genomics (1 paper)

Prior OSU (total 27)

Physiological Genomics (8 papers)
Journal of Dairy Science (6 papers)
Small Ruminant Research (4 papers)
Journal of Dairy Research (2 papers)
Animal (2 papers)
BMC Research Notes (1 paper)
BMC Genomics (1 paper)
Research in Veterinary Science (1 paper)
Proteome Science (1 paper)
Medicina (1 paper)

vii. Chair

- qPCR & NGS 2013 Event Next Generation Thinking in Molecular Diagnostics. Session “Biomarkers: Transcriptional Biomarkers”, Munich, Germany

viii. International expert for thesis evaluation

- PhD Thesis for Ramy Elgendy titled “Transcriptomic approaches to study the effects of xenobiotics in ruminants”, Università di Padova, Italy, 2016
- PhD Thesis for Elena Bichi titled “Síntesis endógena de ácidos grasos en la glándula mamaria y síndrome de baja grasa en la leche en ovejas”. Instituto de Ganadería de Montaña (IGM), Universidad de León. León, Spain. 2015
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- ix. International scholarship/fellowship submission**
 - Borsa Ermenegildo Zegna (for PhD abroad) for Marco Cusimano, 2015
 - SERB Overseas Postdoctoral Fellowship for Dr. Guptha Rajesh, from India, 2014
 - CONACYT scholarship for Karla R. Hernandez, 2013
- x. Other**
 - Participated in NIFA Climate Change and Agroecosystem online Survey (November 2016)
 - Participated in an Open Science Study by Richard Gold, James McGill Professor, McGill Faculty of Law Associate member, McGill Department of Human Genetics, August 2016
 - Participated to the Academic Career survey from the Washington State University (see www.opinion.wsu.edu/AcademicCareers) 2014
 - I proposed the ADSA Triennial Lactation/BOLFA (with Lactation Biology): Nutrigenomics in Dairy Cows. I have also selected the speakers for the meeting. This was held in Kansas City in the Joint ADSA-ASAS meeting in 2014.
 - Written letters of recommendation for 6 students (2 from OSU) to apply for schools, awards, or research opportunities, and 3 senior scientists (all from OSU) to apply for faculty positions and/or awards.

3. Service to the Public (professionally related)

Year	Title of talk	Meeting	Location	# attending	Invited
2015	Goats at Oregon State University	27 th Annual North-West Oregon Dairy Goat Association Conference	Clackamas (OR)	15	Yes
2013	Integrate Diagnostic System Welfare	2013 Oregon Dairy Farmers Annual Convention	Salem (OR)	~150	Yes

Year	Interview	Magazine/web	Link	Date published
2016	Academic Interview	By Gerd Bobe for his class ANS505	I was interviewed in the class by Dr. Gerd Bobe and the graduate students	N/A
2015	Raw milk	By Gurney Alyssa Elain (to fulfill a class assignment)		5/21/15
2014	Nutrigenomics to redefine nutrition	AllAboutFeed*	http://www.allaboutfeed.net/Nutrition/General/2014/5/Nutrigenomics-to-redefine-nutrition-1478351W/	5/14/2014

*Responded to a questionnaire used to write an article for the AllAboutFeed magazine. 2/18/2014

4. Service to the Public (non-professionally related)

Year	Type	Argument	Agency
2016	Tour of the lab and OSU Dairy	Gave the tour to future science teachers	OSU
2015	Tour of the OSU Dairy	Gave a tour to the farms to kids from 5 to 12 Years old	4H

E. AWARDS

2016. Best poster presentation (titled The Dynamic Impact Approach as a web-based platform for analysis of time-course or multiple treatments omics datasets) for the International Conference on Biological Ontology & BioCreative, Corvallis, OR August 1-4.

2014: 2013 Star Reviewers from The American Physiology Society