

ROCÍO MELISSA RIVERA, Ph.D. - CURRICULUM VITAE

Professor

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Division of Animal Sciences
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Education

- Ph.D., Reproductive Physiology, 2003
Animal Molecular and Cell Biology Concentration
University of Florida, Gainesville, Florida
- M.S., Reproductive Physiology, 1995
Iowa State University, Ames, Iowa
- B.S., Animal Science, 1993
Iowa State University, Ames, Iowa
- B.S., Dairy Science, 1993
Iowa State University, Ames, Iowa

Academic Appointments

- Professor – Sept 2021 - present
- Associate Professor with tenure – September 2014 - 2021
- Director of Graduate Studies Division of Animal Sciences – August 2013 – July 2015
- Doctoral Faculty – February 2013
- Graduate Faculty – November 2007
- Assistant Professor – August 2007

Position Description

75% Research
15% Teaching
10% Service
0% Extension

Other Affiliations

- Reproductive Performance in Domestic Ruminants – Multistate Hatch Project - 7004137
- Member of the Interdisciplinary Reproduction and Health Group. 2017 – present
- Member of the Epigenetics at Mizzou Group. 2014 - present
- Member of the Center for Reproductive Sciences. Institute for Reproductive Health and Regenerative Medicine. University Kansas Medical Center – 2014 - 2018.
- Member of the University of Missouri F21C Reproductive Biology Cluster. 2007 – 2020

Previous Employment

- Post-Doctoral Researcher - January 2004-July 2007
University of Pennsylvania
Dr. Richard Schultz Laboratory - Department of Biology
Dr. Marisa Bartolomei Laboratory - Department of Cell & Developmental Biology, School of Medicine
- Ph.D. Student. 1999-2003.
University of Florida
Dr. Peter Hansen Laboratory - Department of Animal Sciences/Reproductive Physiology
- Laboratory Technician/Manager. 1996-2003
University of Florida
Dr. Peter Hansen Laboratory - Department of Animal Sciences/Reproductive Physiology
- Graduate Research Assistant. 1993-1995
Iowa State University
Dr. Stephen Ford Laboratory - Department of Animal Science/Reproductive Physiology
- Laboratory and Surgical Assistant. 1991-1993
Iowa State University
Dr. Stephen Ford Laboratory - Department of Animal Science/Reproductive Physiology
- Laboratory Assistant. 1991-1992
Iowa State University
Dr. Julie Jarvinen Laboratory - College of Veterinary Medicine/Pathology Department

Society Memberships

- American Association for the Advancement of Science – 2021- present
- International Embryo Technology Society, 2020 – present
- Epigenetics Society – 2017 - present
- Society for the Study of Reproduction. 1997 – present.

HONORS, PROFESSIONAL RECOGNITIONS, AND AWARDS

As MU Faculty member – extramural

- University of Gent, Belgium - Foreign postdoctoral Fellowship Host Dr. Ann Van Soom. Mobility Fund application for Foreign PostDoc - 2023-BO-01. June-July 2023
- Society for the Study of Reproduction and Canadian Fertility and Andrology Society exchange speaker, September 2022. Representing SSR at CFAS.
- Fulbright Senior Scholar - 2019 – University of Murcia, Spain. Reproductive Physiology Group. Sept-Dec 2019.
- NIH study section permanent member - Six-year member Cellular, Molecular and Integrative Reproduction Study Section. July 2018 - June 2024
- Highly cited paper (top 5) - *Epigenetics in fertilization and preimplantation embryo development*, published in 2013 is one of the most highly cited papers during 2014, 2015 and up until June 2016. Progress in Biophysics and Molecular. Recognized December 2016.
- Junior Faculty Burroughs Wellcome Award to attend the SSR Annual Meeting Grand Rapids, Michigan, July 19-23, 2014.
- NIH Loan Repayment Program- Contraception and Infertility Research. 2013-2014
- NIH Loan Repayment Program- Contraception and Infertility Research. 2010-2012

As MU Faculty member – intramural

- [2023 Mentor of CAFNR William Lamberson Distinguished Dissertation Awardee](#)
- [2022 College of Agriculture Food and Natural Resources Graduate Mentor Award](#)
- [2021 MU Graduate Faculty Mentor Award](#) Minute- 24:45
- University of Missouri Cambio Center fellow – April 2020 - present
- Nominated and recognized for the University of Missouri Undergraduate Researcher “Mentor of the Year” – April 2018
- Nominated for the December 2017 Advisors Forum Shout Out Award.
- Mentor Recognition Breakfast hosted by Provost Garnett S. Stokes - April 19, 2016.
- 2015 MU Chancellor’s Excellence Awards – Most Outstanding Advisor
- University of Missouri Freshman Interest Group Co-Facilitator Spotlight Recognition. November 2013
- Undergraduate Research Mentor Award - University of Missouri Office of Undergraduate Research. 2010

As trainee

- FASEB MARC Fellow Oral Presenter Travel Awardee to participate in the 39th Annual Society for the Study of Reproduction Meeting. 2006.
- Sigma Xi - The Scientific Research Society, Graduate Student Research Award University of Florida Chapter. 2004.
- Elected as a member of Gamma Sigma Delta, the Agriculture Honor Society. 2004
- University of Florida Department of Animal Sciences Graduate Student of the Year – Ph.D. category. 2003.
- FASEB MARC Fellow Poster Presenter Travel Awardee to participate in the 36th Annual Society for the Study of Reproduction Meeting. 2003

- Ruska Award Recipient for outstanding student presentation in electron microscopy - Southeastern Electron Microscopy Society. 2002
- FASEB MARC Fellow Poster Presenter Travel Awardee to participate in the 35th Annual Society for the Study of Reproduction Meeting. 2002.
- USDA National Research Initiative Fellow - Presented at the 33rd Annual Meeting of the Society for the Study of Reproduction. 2000
- Superior Accomplishment Award Recipient – USPS Scientific/Technical, University of Florida Institute of Food & Agricultural Sciences. 1999.
- Elected as a member of the Florida Chapter of Sigma Xi, the Scientific Research Society. 1997.
- Nominated for Work-Study employee of the year at Iowa State University. 1994.
- Recipient of St Jude's Scholarship (St. Thomas Aquinas Catholic Student Center – Ames, Iowa). 1992.

Rivera Laboratory Trainees – Fellowships, awards, recognitions, and accomplishments relating to the laboratory's endeavors

1. Hector Nava-Trujillo - selected as one of the recipients of the 2024 Peter Farin Travel Award to attend the International Embryo Technology Conference in January 2024, Denver Colorado.
2. Camryn Habben. Mizzou Forward Undergraduate Research Grant. University of Missouri. 2023-2024 Academic Year.
3. Camryn Habben. Honor's College 2023 Cherng Summer Scholars
4. Yahan Li. 2023 CAFNR William Lamberson [Distinguished Dissertation Award](#)
5. Godwin Iroanya - CAFNR Matching Assistantship. Aug 2022 – April 2023.
6. Hector Nava-Trujillo - SSR Burroughs Wellcome Fellow to attend the 55th Annual meeting of the Society for the Study of Reproduction. Spokane Washington, July 2022
7. Yahan Li selected for a Flash Talk during the 54th Annual Meeting, December 15-18, 2021, in St. Louis, Missouri.
8. Yahan Li finalist for the Trainee Research Award Poster Competition (Pre-Doctoral) at the SSR's 54th Annual Meeting, December 15-18, 2021, in St. Louis, Missouri.
9. Yahan Li selected to receive a 2021USDA–NIFA–AFRI to attend the SSR's 54th Annual Meeting, December 15-18, 2021, in St. Louis, Missouri.
10. Yahan Li - Abstract selected for an oral presentation at the DOHaD satellite meeting on the Developmental Origin of Domestic Animal Health and Diseases and Epigenetics (DADE). October 2021.
11. Yahan Li received the Dr. Roger L. Morrison Scholarship. College of Agriculture, Food & Natural Resources, University of Missouri. September 2021
12. Laura Lopez Jover – Master Thesis Top Honor. Master of Science in Biology and Technology of Reproduction. University of Murcia, Spain. Examined and graded by a panel of unrelated judges and chosen as the best thesis and defense from a class of 20 students. September 2020.
13. Edgar Soto Moreno - H.A. Herman Memorial A.I. Industry Scholarship, CAFNR 2020-2021.
14. Yahan Li – Abstract selected for an oral presentation at the 14th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine. October 2017
15. Yahan Li - USDA–NIFA–AFRI Merit Award. 50th Annual Meeting of the Society for the Study of Reproduction. July 2017

16. Yahan Li - Larry Ewing Memorial Trainee Travel Fund. 50th Annual Meeting of the Society for the Study of Reproduction. 2017. July 2017
17. Yahan Li - Trainee Travel Award. The 13th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine. October 2016
18. Zhiyuan Chen - Trainee Travel Award. The 13th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine. October 2016
19. Zhiyuan Chen – Mizzou Epigenetics Symposium – one of two trainee abstracts selected for a platform presentation. Nov 9 2016.
20. Kira Marshall - 2016 MU Distinguished Master's Thesis Award Recipient.
21. Zhiyuan Chen - Trainee Poster Award (graduate student category) at the 11th Annual Gilbert S. Greenwald Symposium on Reproduction. Kansas City, KS. 2014
22. Kira Marshall – Mizzou Epigenetics Symposium – 3rd price – Poster Presenter. Nov 6 2014.
23. Zhiyuan Chen – Mizzou Epigenetics Symposium – abstract selected for the trainee oral presentation. Nov 6 2014.
24. Zhiyuan Chen - 2014 USDA-NIFA-AFRI Travel Fellow to attend SSR 47th Annual Meeting in July 2014
25. Zhiyuan Chen - 2013 MU Distinguished Master's Thesis Award Recipient. Award presented in April of 2014 and will be the official MU entry for the Midwestern Association of Graduate Schools annual thesis competition.
26. Zhiyuan Chen – Mizzou Advantage Travel Award. April 2014
27. Kira Marshall – Mizzou Advantage Travel Award. April 2014
28. Zhiyuan Chen - CAFNR - H.A. Herman Memorial A.I. Scholarship Recipient. 2013
29. Angela Schenewerk - Third place at the Rocky Mountain Reproductive Sciences Symposium with an oral presentation of her research. Loveland CO. April 2013
30. Verónica Negrón-Pérez – second place graduate student/postdoc category - Life Sciences Week Molecular & Cellular Biology section poster competition. April 2013
31. Laura Moon - selected as a Hughes Research Fellow for the 2013-2014 academic year.
32. Zhiyuan Chen - Trainee Poster Award (graduate student category) at the 9th Annual Gilbert S. Greenwald Symposium on Reproduction. Kansas City, KS. 2012
33. Zhiyuan Chen - Larry Ewing Memorial Trainee Travel Fund granted by the Society for the Study of Reproduction. 2012
34. Verónica Negrón-Pérez - Federation of American Societies for Experimental Biology (FASEB)/Maximizing Access to Research Careers (MARC) Program Poster/Oral Presentation Travel Award. 2012
35. Zhiyuan Chen – Division of Animal Sciences Graduate Student Forum Poster Competition 2nd Place - University of Missouri. 2012
36. Angela Schenewerk - Recipient of Miller Fellowship from the Division of Animal Sciences at the University of Missouri. 2011
37. Katherine Robbins – Division of Animal Sciences Graduate Student Forum Poster Competition 1st place - University of Missouri. 2011
38. Md. Almamun - Finalist Trainee Research Award Poster Competition. Society for the Study of Reproduction. Milwaukee, WI. 2010.
39. Tricia Rowilson - Life Sciences Undergraduate Research Program Fellow for academic year 2009-2010.

RESEARCH

Summary of Research Interest

The research conducted in my laboratory aims at understanding the mechanisms whereby manipulations of mammalian gametes and embryos result in alterations of the epigenome.

The laboratory is currently engaged in several research projects. The main projects are:

- 1) Characterization of a loss-of-imprinting overgrowth syndrome associated with the use of assisted reproduction in humans and bovids.
- 2) Identification of LOS during early pregnancy in cattle
- 3) Identification of the molecular mechanisms involved in the acquisition of DNA methylation in mammalian oocytes.
- 4) Dissecting the molecular pathways involved in loss-of-imprinting as a result of mammalian embryo manipulation.

Current Active Collaborators

Departmental/MU

- Jianlin Cheng, Ph.D. - Department of Electrical Engineering and Computer Science University of Missouri
- Ahmed Balboula, Ph.D. - Division of Animal Sciences, University of Missouri.
- Allison Meyer – Division of Animal Sciences, University of Missouri
- David Beversdorf, M.D. Cognitive Neuroscience Laboratory, University of Missouri School of Medicine.

National

- Darren Hagen, Ph.D. - Division of Animal Sciences, University of Missouri.
- Jennifer Kalish, M.D., Ph.D. - University of Pennsylvania, Perelman School of Medicine. The Children's Hospital of Philadelphia.
- Sofia Ortega, Ph.D. - Division of Animal Sciences, University of Wisconsin.
- Peter Hansen, Ph.D. – Department of Animal Science University of Florida.
- Callum Donnely, DVM, PhD - Cornell College of Veterinary Medicine.

International

- Pilar Coy Fuster, Ph.D. Physiology of Reproduction University of Murcia, Spain
- Ann Van Soom, D.V.M., Ph.D. Ghent University, Department of Obstetrics, Reproduction and Herd Health
- Sebastian Canovas, Ph.D. Physiology of Reproduction University of Murcia, Spain
- Erik Mullaart, Ph.D. Senior Researcher CRV. HQ Innovation. Arnhem, Netherlands

FUNDING

Pending

- NIH (R24) Agca (PI) 07/1/2025 - 06/30/2029
Title: Employment of a novel microfluidic channels-based in-vitro fertilization device and alternative sperm transportation modalities for the cryo-recovery of mutant mouse models
Role = Collaborator
- AFRI-NIFA Rivera (PD) 1/1/2025 – 12/31/2026
Title: Deciphering the signaling role of insulin-like growth factor 2 receptor in bovine embryonic and fetal cells
- AFRI-NIFA Rivera (PD) 2/1/2025 – 1/31/2028
Title: Characterizing the relationship between genomic imprinting and the insulin like growth factor receptor 1/insulin receptor signaling pathways in bovine fetal growth

Current Research Support

Extramural

- USDA Multistate Research Project: W4112 March 2024 - present
Reproductive Performance in Domestic Ruminants.
- AFRI-NIFA 2022-67015-37086 Meyer (PD) 09/15/2022-09/14/27
Project Title: Maternal versus fetal effects on partitioning of nutrients and their effect of epigenomic regulation
Role = Co-PD
- AFRI-NIFA 2022-67015-36301 Balboula (PD) 01/01/2022-12/31/2026
Project Title: Improving the Quality Of Preimplantation Bovine Embryos By Regulating Cathepsins
Role = Co-PD

Intramural

- University of Missouri Research Council Rivera (PI) 07/1/2023 – 6/30/2024
Project Title: Characterization of the involvement of follicle stimulating hormone and granulosa cells on the acquisition of DNA methylation of mouse oocytes.

Completed Research Support

Extramural

- AFRI-NIFA - 2018-67015-27598 Rivera (PI) 03/01/2018 – 2/28/2023 (extension:2/24)
Dual Purpose with Dual Benefit: Research in Biomedicine and Agriculture Using Agriculturally Important Domestic Animal Species
Project Title: Use of a Bovine Overgrowth Syndrome to Characterize the Molecular Etiology of BWS

- NIH – RO1/Dual R01HD092254-03 Lucy (PI) 07/01/2018 – 6/30/2023
Project Title: Uterine microbiome: Functional significance in establishing the uterine program postpartum
Role = Co-Investigator
- NIH – 2RO1HD062860-06 Kinsey (PI) 7/1/2017-6/30-2021 (extension 2022)
Project Title: PYK2 function during fertilization
Role = Co-Investigator
- NSF - 1615789 Ji (PI) 06/01/16 – 7/31/2020
Project Title: Development of Statistical Methods for Analyzing Whole Genome Bisulfite Sequencing Experiment Data to Identify Differentially Methylated Regions
Role = Co-PI
- NIH - R21HD080763 Timms (PI) 05/01/2015 – 03/31/2017
Project Title: Developmental effects of endometriosis on fertility of future generations
Role: Col
- USDA Multistate Project No: W2171 2012-2013
Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock.
- R21HD062920-01 Rivera (PI) 9/2010 – 8/2012 (no cost extension – 5/2014)
Establishment of a phenotypical model of adverse outcomes associated with ART
The goal of this project was to develop a bovine model to develop a bovine model to study the etiology of the fetal overgrowth human syndrome Beckwith-Wiedemann.
Role:PI

Intramural

- Joy of Discovery – CAFNR Rivera (PI) 01/01/2022-12/31/2023
Project title: Dissecting the molecular pathways involved in loss-of-imprinting as a result of mammalian embryo manipulation
- International Center's Tricontinental Partnership Rivera (PI) June-July 2023
(UM-Ghent, Belgium)
- University of Missouri Research Council. Rivera (PI) 3/2014-7/2015
Chromatin contraction in aged oocytes in mice
- University of Missouri Research Council Rivera (PI) 11/2010-11/2012
Is Biallelic Expression of the Imprinted Gene *H19* in Preimplantation Mouse Embryos the Result of a Molecular Clock Rather than Embryo Manipulation?
- University of Missouri Research Board Rivera (PI) 8/2009-11/2010
Effects of assisted reproduction on genomic imprinting in bovine embryos.

PRESENTATIONS

Research Talks

Talks given abroad

1. University of Gent, Belgium – Faculty of Veterinary Medicine. July, 2023. Title: From phenotype to chromosome architecture: Large Offspring Syndrome in Ruminants
2. Invited Keynote Speaker - 11th International Ruminant Reproduction Symposium (IRRS) - Galway, Ireland. May 28th to June 1st, 2023. Title: Large offspring syndrome in ruminants: current status and prediction during pregnancy.
3. Invited Speaker - Université Laval, Québec. April 17, 2023. Title: Abnormal offspring syndrome: From phenotype to chromosome architecture.
4. Invited Exchange Speaker – Representing the Study of Reproduction with a research talk at the Canadian Fertility and Andrology Society Annual Meeting. Halifax, Canada. September 2022.
5. Physiology Department - University of Murcia. Title: ART, Age and the Epigenome. 2019. Murcia, Spain.
6. Department: Animal Reproduction. Instituto Nacional de Investigaciones Agrarias. Title: Disturbed Development: ART and the Epigenome. 2019. Madrid, Spain.
7. School of Agriculture & Food Sciences, University College Dublin. Title: Molecular Characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2019. Dublin, Ireland. Also invited by Fulbright Ireland.
8. Opening Ceremony Master: Biology and Technology of Reproduction in mammals, University of Murcia. Title: Disturbed Development. Murcia, Spain. 2019.
9. School of Biosciences, University of Nottingham. Title: Epigenetic basis of congenital overgrowth syndromes in humans and animals: link to assisted reproduction. 2019. Nottingham, England.
10. Division of Pharmacy and Optometry, Faculty of Biology, Medicine and Health. University of Manchester. Title: Epigenetic basis of congenital overgrowth syndrome: link to assisted reproduction. 2019. Manchester, England.
11. Faculty of Veterinary Medicine, Ghent University. Title: Large Offspring Syndrome: Epigenetic impact and consequences in the industry sector. 2019. Ghent, Belgium.
12. Invited Speaker REP-BIOTECH European Joint Doctorate Program. Final Project Conference. Title: Large offspring syndrome: Epigenetic impact and consequences in the industry sector. 2019. Murcia, Spain.
13. Plenary Speaker. Animal Reproduction Branch of Chinese Association of Animal Science and Veterinary Congress. Title: Molecular characterization of a congenital overgrowth syndrome induced by assisted reproduction. Beijing, China. August 2017
14. Plenary Speaker: Primer Simposio Seremas: Genética Reproductiva. Title: La manipulación de embriones mamíferos previos a la implantación y su efecto en el imprinting genético. 2011. Auditorio Bayer, Buenos Aires, Argentina.
15. Plenary Speaker: Primer Simposio Seremas: Genética Reproductiva. Title: El efecto de las técnicas de reproducción asistida en el programa epigenético de ovocitos y embriones. 2011. Auditorio Bayer, Buenos Aires, Argentina.
16. Invited Speaker: Instituto de Biología y Medicina Experimental (CONICET). Title: ART, Age, and Epigenetics. 2011. Buenos Aires, Argentina.
17. Invited Speaker: V Catedra Nacional de Medicina Veterinaria y Zootecnia Aline S. de Aluja. Temática: Fertilidad Animal. Universidad Autónoma de Zacatecas. Title: Efectos

epigenéticos de ovocitos y embriones antes de la implantación Parte I. 2010. Zacatecas, Mexico.

18. Invited Speaker: V Catedra Nacional de Medicina Veterinaria y Zootecnia Aline S. de Aluja. Temática: Fertilidad Animal. Universidad Autónoma de Zacatecas. Title: Efectos epigenéticos de ovocitos y embriones antes de la implantación Parte II. 2010. Zacatecas, Mexico.

Talks of international reach

19. Invited Speaker - 2023 AETA and CETA/ACTE Joint Convention. Orlando Florida. Title: Abnormal Calf Syndrome. October 2023.
20. Invited Speaker – Society for the Study of Reproduction Annual Meeting. Title: Abnormal offspring syndrome: From phenotype to chromosome architecture. July 2022, Spokane, Washington.
21. Reproduction in the Swamp. University of Florida, Gainesville, FL. Title: Abnormal offspring syndrome: From phenotype to chromosome architecture. January 14-16, 2022.
22. Primer Encuentro Académico Internacional en Ciencias Básicas Biomédicas. Universidad Nacional de Colombia. Title: Síndrome de Sobrecrecimiento: Influencia de la Epigenética en la Reproducción Asistida. November 17, 2020.
23. Keynote speaker. American Embryo Transfer Association & The Canadian Embryo Transfer Association Joint Annual Convention. Title: Genomic Imprinting, Epigenetics and Abnormal Offspring Syndrome. 2020. October 5-7, 2020. Online format (Zoom) due to COVID19
24. Reproseminars - International seminar series on male and female reproduction. Title: Of Cow and Mouse: Epigenetics Effects of ART. Zoom. August 27, 2020. Talk given to ~80 Reproductive Physiologists from ~10 countries.
25. Triennial Reproduction Symposium at the 2020 American Association of Animal Science. Epigenetic basis of congenital overgrowth syndrome in cattle: link to assisted reproduction. Virtual meeting due to COVID19, July 23, 2020.
26. Colorado State University “Save the Egg” group. Title: ART, AGE and the Epigenome. June 30, 2020. Via Zoom due to COVID19.
27. 46th Annual International Embryo Technology Society. Developmental Programming Associated with Assisted Reproduction. Title: Consequences of assisted reproductive techniques on the embryonic epigenome in cattle. New York, New York. January 2020
28. Molecular characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2019. Cattle/Sheep/Goat workshop. Plant and Animal Genome Conference. San Diego, California.

Talks of national reach

29. Invited Keynote Speaker - 3rd Annual James J. Ireland Endowed Lectureship in Farm Animal Agricultural and Biomedical Research and RDSP Research Day. Michigan State University. Title: Abnormal Offspring Syndrome: From Phenotype To Chromosome Architecture. September 9th, 2024
30. Invited Speaker – UC Davis. Reproductive Biology Supergroup & Designated Emphasis in Reproductive Biology. Title: Congenital overgrowth syndrome: from phenotype to chromosome architecture. April 18, 2022.
31. Invited Speaker - Yale's Training Program in Genetics Annual Symposium. Title: Congenital overgrowth syndrome: from phenotype to chromosome architecture. May 3, 2022.

32. Invited Speaker. Reproductive Fluids in Fertilization and Early Embryonic Development - Physiology section. Midwest Section of the American Society of Animal Science. Title: Large Offspring Syndrome: Effects of in vitro Production on Embryo Epigenetics and Development. March 2021 – Omaha, Nebraska.
33. Reproductive biology seminar series - University of Illinois, Urbana-Champaign. Title: Of cow and mouse: ART and the Epigenome. October 7, 2020.
34. Marc program. New Mexico State University. Title: ART and the Epigenome. September 8, 2020.
35. Seminar: Obstetrics and Gynecology, Southern Illinois University. Title: Molecular characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2018. Carbondale, Illinois.
36. University of Puerto Rico – Mayagüez. Title: Disturbed Development: Assisted Reproduction and the Epigenome. 2018. . Mayagüez, Puerto Rico.
37. Seminar Department of Animal and Range Sciences, New Mexico State University. Title: Molecular characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2018. Las Cruces, New Mexico.
38. Molecular characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2018. Seminar: Veterinary Medicine, Oklahoma State University. Stillwater, Oklahoma.
39. Disturbed Development: ART, AGE and the Epigenome. 2015. Seminar: Reproductive Physiology/Endocrinology. Department of Biomedical Sciences, Cornell University. Ithaca, New York.
40. Seminar: Department of Veterinary Physiology, College of Veterinary Medicine, Texas A&M University. Title: Disturbed Development: ART, AGE and the Epigenome. 2015. College Station, Texas.
41. Plenary Speaker: 17th Annual Florida International University Biomedical and Comparative Immunology Symposium. Title: Disturbed Development: Assisted Reproduction & the Epigenome. 2015. Miami, Florida.
42. Disrupted Development. 2014. Invited Speaker: Ernest E. Just Biomedical Society (EE Just) Spring Seminar. University of Pennsylvania. Philadelphia, Pennsylvania.
43. Seminar: Cell and Molecular Biology (CMB) Seminar series at the University of Texas - San Antonio. Title: Disrupted Development. 2014. San Antonio, Texas.
44. Invited Speaker: Summer Summit on Egg Quality: from model organisms & molecular mechanisms to clinical perspectives & applications. Title: Genomic imprinting and loss-of-imprinting in bovine pre-and post-implantation embryos. 2013. Northwestern University. Chicago, Illinois.
45. Seminar: Department of Animal Science Oklahoma State University. Title: Large offspring syndrome an animal model for Beckwith-Wiedemann Syndrome. 2013. Stillwater, Oklahoma.
46. Seminar: Endocrine Disruption Discussion Group. University of Missouri. Title: Disrupted Development. 2013. Columbia, Missouri.
47. Seminar: Obstetrics, Gynecology, & Women’s Health. Grand Rounds. University of Missouri. Title: ART and age alter the epigenetic program of oocytes, pre- and post-implantation embryos in mammals. 2012. Columbia, Missouri.
48. Plenary Speaker: Tenth Annual Research Symposium University of Florida Animal Molecular and Cell Biology Program Distinguished Lecturer. Title: ART and age alter the epigenetic program of oocytes, pre- and post-implantation embryos in mammals. 2012. St. Augustine, Florida.

49. Seminar: Department of Genetics, Rutgers, The State University of NJ. Title: Effects of Assisted Reproductive Technologies on the Epigenetic Program of Pre- and Post-Implantation Mouse Embryos. 2012. Piscataway, New Jersey.
50. Seminar: Department of Molecular & Integrative Physiology, University of Kansas Medical Center. Title: Effects of assisted reproductive technologies on the epigenetic program of pre- and post-implantation mouse embryos. 2009. Kansas City, KS. Kansas City, Kansas.
51. Invited Speaker: Greenwald Symposium. Title: The epigenetic program of preimplantation mouse embryos is altered by assisted reproductive technology procedures. 2009. Kansas City, Kansas.
52. Invited Speaker: Ponce School of Medicine. Title: Manipulations of mouse embryos prior to implantation result in aberrant expression of imprinted genes on day 9.5 of development. 2008. Ponce, Puerto Rico.

Conference/Scientific meeting /other presentations

Talks of international reach

53. Frontiers in Reproduction 2017 Symposium. Title: Molecular Characterization of a congenital overgrowth syndrome induced by assisted reproduction. 2017. Woods Hole, Massachusetts.
54. Invited Speaker: Target Meeting's 2nd World Molecular and Cell Biology Online Conference. Animal Model Symposium. Title: Development of a Bovine Model to Study the Overgrowth Loss-of-Imprinting Syndrome Beckwith-Wiedemann. 2013.
55. Frontiers in Reproduction 2013 Symposium. Title: Large offspring syndrome: a bovine model for the human loss-of-imprinting overgrowth syndrome Beckwith-Wiedemann. 2013 Woods Hole, Massachusetts.
56. Frontiers in Reproduction 2010 Symposium. Title: Size-Dependent Acquisition of global DNA methylation in oocytes is altered by hormonal stimulation. 2010. Woods Hole, Massachusetts.
57. Invited Speaker: Molecular Reproduction and Development Conference. Title: Effects of superovulation and/or culture on DNA methylation and expression of epigenetic modifiers in preimplantation mouse embryos. 2009. Providence, Rhode Island.
58. Invited Speaker: Frontiers in Reproduction Minisymposium - Society for the Study of Reproduction. Title: Epigenetic Effects of Manipulating Mouse Oocytes and Preimplantation Embryos. 2009. Pittsburgh, Pennsylvania.

Talks of local/national reach

59. South Farm Virtual Field Day. Title: Overgrowth syndrome in cattle. October 2020.
60. University of Missouri Epigenetics Group Chalk Talk. Title: Disturbed Development: ART, Age and the Epigenome. 2015. Columbia, Missouri.
61. The Center for Reproductive Sciences. University of Kansas Medical Center, Chalk Talk. Title: Disturbed Development: ART, Age and the Epigenome. 2014. Kansas City, Kansas.
62. Epigenetic alterations caused by superovulation and embryo culture. 2011. Invited Speaker: Advances in Reproductive Biology and Genetics: Redefining the Cell for the betterment of science, medicine and agriculture. University of Missouri. Columbia, Missouri.

Science (non-research related)***Talks of national/local reach***

63. Epigenetic Influences on Perinatal Health: The nuts and bolts of Epigenetics. Perinatal Nursing Conference. Columbia Missouri. October 2015.
64. Epigenetics: the good, the bad and the ugly. 2017. Saturday Morning Science Series. Bond Life Science Center. University of Missouri. Columbia Missouri.
65. The nuts and bolts of Epigenetics: An animal Science perspective. Department of Animal Science. Oklahoma State University. Stillwater Oklahoma. May 2013.
66. The nuts and bolts of Epigenetics: An animal Science perspective. Division of Animal Sciences University of Missouri. Columbia, Missouri. April 2013.
67. 'What's the 'Epi' in Epigenetics? Evoblitz group. University of Missouri. Columbia, Missouri. October 2011
67. Animal Research. Pre-Veterinary Freshman Interest Group (Pro-Seminar course no = INTDSC 1001 - 095). University of Missouri. Columbia, Missouri. Fall 2010.

Courses, Workshops, Panels and Forums, Conferences***Talks given abroad***

68. Sesión Informativa sobre Doctorado en USA (Ph.D. in the USA). 2019. University of Murcia. Murcia, Spain.
69. Epigenetics - the basics. Graduate course in Reproductive Biology. Veterinary School - University of Zacatecas, Mexico. Zacatecas, Mexico. October 2010.
**Note: presentation given in Spanish*

Talks of national/local reach

70. Student/Technician Session: Quality Control in the Embryo Laboratory: Perspectives from Industry and Academia. Presented by Drs. Peter Hansen and Rocío Rivera. 2023 AETA and CETA/ACTE Joint Convention. Orlando Florida. October 2023
71. Session 9: Abnormal Calf Syndrome Case Reports and Panel Discussion Presented by Drs. Thomas Divers, Scott Larsen, Ky Pohler, John Prosocki, and Rocío Rivera. 2023 AETA and CETA/ACTE Joint Convention. Orlando Florida. October 2023
72. Presenter. Fulbright Opportunities for Faculty: [STEM Fields webinar](#). Organized by the MU Office of International Programs. March, 2023
73. Panel member - Interview Tips. The Mizzou SACNAS Chapter partnering with the IMSD/MARC program. December 2022.
74. Invited Speaker. Teaching and Extension Education Symposium II. Title: Beyond the Classroom: Community Engaged Learning in Animal Sciences. 2022 Midwest Animal Science Meeting, March 2022
75. Guest Speaker – University of Ponce, Puerto Rico pre-medical chapter of the American Medical Women's Association. October 2021
76. Guest Speaker - New Mexico State University's MARC Program Virtual Presentation– October 2021
77. Panel member - Virtual Dissertation Bootcamp - Utilizing their advisor and committee members. University of Missouri Graduate School. August 2021.
78. Guest Speaker - CAFNR Connections. Club for providing opportunity for students of color in CAFNR. February 22, 2021

79. Discussion – Advisor vs Mentor – University of Missouri First-Year Scholars - Diversity fellowships from the Graduate School. Panel about Mentor/Advisor differences – University of Missouri Graduate School First-Year Scholars. Feb 12, 2021.
80. Panel member - Interview Tips. The Mizzou SACNAS Chapter partnering with the IMSD/MARC program. January 27, 2021.
81. Faculty Mentor Panel in Undergraduate Research. Office of Undergraduate Research University of Missouri. October 6, 2020.
82. Faculty Perspective. COMPASS (CAFNR's Opportunity for Minorities: Promoting and Achieving Student Success) meeting. September 2020.
83. "Becoming a Faculty Member" Panelist for a workshop for the Discover Scholars Program. April, 2019. University of Missouri
84. Use of bioinformatics and computers in the lab's research. 2016. Computer Science Institute for Young Women. University of Missouri - Supported by a MO EPSCoR contract with the National Science Foundation. Columbia, Missouri.
85. Latinos in Science Panel. 2014. MU Society of Hispanic Professional Engineers (SHPE) – University of Missouri. Columbia, Missouri.
86. Faculty Perspective. 2014. College Success Seminar Class (SSC 1150). Columbia, Missouri.
87. Pre-Veterinary Freshman Interest Group. 2011. Career exploration panel. University of Missouri. Columbia, Missouri
88. Faculty Perspective Panel. 2011. Exposure to Research for Science Students (EXPRESS) program. University of Missouri. Columbia, Missouri.
89. Female Perspectives on Careers in Animal Science. Division of Animal Sciences. Columbia, Missouri. Spring. 2009
90. Finding 'perfect' career a long journey. Nexus Graduate Student Association. Columbia, Missouri. Spring 2008

Interviews (Radio, Magazine, News, Blogs)

91. Women in Ag Science (WAGs) podcast. May 2024
92. [SSR Sept-Oct 2021 Newsletter](#)
93. CAFNR News. [A Commitment to Social Responsibility and Public Service](#). January 2021.
94. [Women in Ag Science Interview](#) – October 2020
95. Cambio Center Podcast – March 2020 – Student Latino Community at Mizzou
96. [The Big Electron – Radio. 2017](#). MU Graduate Student Directed Talk Show KCOU Columbia 88.1 FM and Podcast.
97. Medicina y Salud Publica - Blog- Puerto Rico – 2015. Los-metodos-de-reproduccion-asistida-tienen-incidencia-sobre-la-epigenetica-que-provoca-el-desarrollo-del-sindrome-de-beckwith-wiedemann-segun-cientifica-puertorriquena.
98. Illumination Magazine Profile. Magazine Spring/Summer 2015. [Title: Epigenetic Explorer](#).
99. Science Daily - Blog. 2015. [Genetic markers for fetal overgrowth syndrome discovered](#).
100. MU News Bureau - News. 2015. [Genetic Markers for Fetal Overgrowth Syndrome](#)
101. The Big Electron - Radio 2013. MU Graduate Student Directed Talk Show KCOU Columbia 88.1 FM

TEACHING

As MU Faculty

- Guest lectures - Epigenetic Origins of Adult Disease. AnSci 8434 – Spring 2021.
- Instructor/class coordinator – Companion Animals. Animal Science 2140. Spring 2016 – present
- Guest lecture – Topic – Undergraduate Research. AN_SCI 1010 - Orientation to Animal Sciences AN_SCI 1010 - Fall 2017 - present
- Instructor Epigenetics section – Molecular Biology II - BIOCHM 9432/BIO_SC 9432/MICROB 9432. Spring 2015 – 2019. Class no longer being taught.
- Instructor – Reproductive Physiology Seminar Class - Animal Science 8413. Spring 2014.
- Mizzou Advantage-Themed Freshman Interest Group Co-Facilitator – One Health, One Medicine. Fall 2013 – 2018
- Sole Instructor - Survey in Epigenetics (Graduate Level Course) – Animal Science 8415. Spring 2009 – present.
- Pre-Vet Freshman Interest Group Co-Facilitator - August 2008- Fall 2012.

As Fulbright Senior Scholar

Master Program: Biology and Technology of Reproduction in mammals, University of Murcia. Murcia, Spain.

- M.S. Thesis Defense Judge - Paula Gallego. Extracellular Vesicles from oviduct and uterus fluid improve the quality of bovine embryos produced in vitro.
- M.S. Thesis Defense Judge - Marta Carrera Alesina. Contaminación bacteriana en muestras seminales humanas tras criopreservación.
- M.S. Thesis Defense Judge – Rocío Delgado Delgado. Efecto de la inhibición de proteasa sobre las propiedades físicas y la actividad biológica de los fluidos reproductivos porcinos.
- Lecture: Control of the estrous cycle in domestic animals with special focus in cow.
- Student seminar Coordinator:
 - Effects of steroid and steroid disrupting agents in testicle function.
 - Communications between cumulus cells and oocytes
 - Effects of heat stress on the female reproductive tract
- How to read the scientific literature and paper discussions (n = 3).

As Guest Lecturer - Abroad

- Invited Lecturer – Topic: Epigenetics. Master of Biology and Technology of Reproduction in mammals, University of Murcia, Spain. February 26-28, 2024. Murcia, Spain
- How to read the scientific literature and paper discussions – three lectures. Master of Biology and Technology of Reproduction in mammals, University of Murcia, Spain. Fall 2020.
- Student Seminar Coordinator. Master of Biology and Technology of Reproduction in mammals, University of Murcia, Spain. September 2020.
 - Communications between cumulus cells and oocytes
 - Effects of heat stress on the female reproductive tract
- Invited Lecturer – Topic: Genomic Imprinting. Master of Biology and Technology of Reproduction in mammals, University of Murcia, Spain. February 2019, 2020, 2021

As trainee

- Instructor - Techniques in Ruminant Reproduction – University of Florida. 1999-2002.
- Taught over 30 people the techniques required for producing bovine embryos in the laboratory as well as several other laboratory techniques. 1996-2003.
- Teaching Assistant – Animal Reproduction Laboratory – Iowa State University. 1996

RESEARCH MENTORING/TRAINING

Post-Doc, Graduate and Undergraduate Student Research Mentoring/Training

Previous Visiting Scientists

Post-Doctoral

- Mohamed Aboul Ezz, PhD. Lecturer. Department of Theriogenology, Faculty of Veterinary Medicine, Mansoura University. October 2021 – April 2022
- Mohammad Reza Bakhtiarizadeh, Ph.D. Assistant Professor. Department of animal and poultry science Genetics and Animal Breeding. College of Aburaihan- University of Tehran- Iran. Summer 2018.

Pre-doctoral

- Zhoulin Wu – China Scholarship Council scholar 2019-2020. Ph.D. student at Sichuan Agricultural University, Chengdu Campus. Chengdu, China. November 2019 – present.

Current Trainees

Doctor of Philosophy

- Hector Nava Trujillo – June 2022 – present.
 - Graduate School Fellowship - Robert E. Waterston Doctoral Fellowship.

Previous trainees

Doctor of Philosophy

- Yahan Li – Start date August 2018 – Defended April 2022. Graduated July 2022.
Dissertation: Involvement of aberrant chromosome architecture and locus-specific vulnerability to DNA methylation epimutations in bovine large offspring syndrome.
<https://mospace.umsystem.edu/xmlui/handle/10355/69885>
Current position: Postdoctoral fellow, Dr. Marisa Bartolomei laboratory. University of Pennsylvania
- Zhiyuan Chen – Start date - May 2013 – Graduated – May 2017.
Dissertation: Molecular Characterization of a congenital overgrowth syndrome induced by assisted reproduction
<https://mospace.umsystem.edu/xmlui/handle/10355/63805>
Current position: Postdoctoral fellow, Dr. Yi Zhang's laboratory. Boston Children's Hospital/Harvard Medical School
Incoming Assistant Professor 1/2023 – Cincinnati Children's Hospital Medical Center

Master of Science - Thesis

Internal

- Bhaumik Patel – Start date August 2018 – Defense January 2021. Graduation May 2021.
Thesis: [Identification of large offspring syndrome during pregnancy through ultrasonography and maternal blood transcriptome analyses.](https://mospace.umsystem.edu/xmlui/handle/10355/69885)
Current position: Senior Research Associate at Molecular Medicine Research Institute. CA
- Yahan Li – Start date January 2016 – Defense July 2018.
Thesis: Altered microRNA expression profiles in bovine fetuses with an assisted reproduction induced congenital overgrowth syndrome.
<https://mospace.umsystem.edu/xmlui/handle/10355/69885>
Current Position: Postdoctoral Fellow University of Pennsylvania
Ph.D. – Rocío Rivera Laboratory – University of Missouri – July 2022
- Kira Marshall – Start date August 2013 - Defense July 2015.
 - Graduate School Fellowship Recipient 2013. Recipient of Miller Fellowship from the Division of Animal Sciences at the University of Missouri. 2013**Thesis:** The effects of aging and FSH on the epigenome of the mouse oocyte.
<https://mospace.umsystem.edu/xmlui/handle/10355/48667>
Current position: Ph.D. Student – Graduate School of Art and Sciences – Yale University
Previous Position: Research Associate in Reproductive Physiology San Diego Zoo Global. San Diego, California.
- Angela Schenewerk – Start date August 2011 - Defense August 2013.
Thesis: Effects of the Use of Assisted Reproduction and High Caloric Diet Consumption on Body Weight and Cardiovascular Health of Juvenile Mouse Offspring.
<https://mospace.umsystem.edu/xmlui/handle/10355/43021>
Current position: Research Assistant. Siteman Cancer Center. St Louis, Missouri.
- Verónica Negrón – Start Date August 2011 - Defense July 2013.
Thesis: Determination of Allelic Expression of H19 in Pre- and Peri-Implantation Mouse Embryos. <https://mospace.umsystem.edu/xmlui/handle/10355/40195>
Current Position: Assistant Researcher. Agricultural Experimental Station Gurabo/University of Puerto Rico Mayaguez, PR.
Ph.D. – University of Florida – July 2017
Postdoctoral - Virginia Tech University, Dr. Michelle Rhoads and Dr. Kiho Lee Laboratories.
- Zhiyuan Chen – Start Date August 2011 - Defense May 2013.
Thesis: Large offspring syndrome: a bovine model for human loss-of-imprinting overgrowth syndrome Beckwith-Wiedemann.
<https://mospace.umsystem.edu/xmlui/handle/10355/37913>

Current position: Postdoctoral fellow, Dr. Yi Zhang's laboratory. Boston Children's Hospital/Harvard Medical School
Ph.D. – Rocío Rivera Laboratory – University of Missouri – May 2017

- Katherine Robbins – Start Date August 2009 - Defense July 2011.
Thesis: Establishment of a phenotypical model of adverse outcomes associated with assisted reproductive technologies.
<https://mospace.umsystem.edu/xmlui/handle/10355/14379>
Current Position: GeneDx
Previous Position: Director Biomolecular Core Laboratory - Nemours A.I. duPont Hospital for Children- Wilmington, DE
Ph.D. - Department of Biological Sciences, University of Delaware. 2016.
- Md. Almamun – Start Date March 2009 - Defense May 2011.
Thesis: Characterization of the epigenetic effects of ovarian hyperstimulation in mouse oocytes. <https://mospace.umsystem.edu/xmlui/handle/10355/14952>
Current Position: FDA's Center for Tobacco Products.
Ph.D. Pathophysiology Area Program. University of Missouri. 2015
PostDoctoral: Medical School/Boston Children Hospital Harvard University.

External

- Laura Lopez Jover. 2019 – July 2020. Master of Science student at the University of Murcia, Spain. Co-mentored with Dr. Sebastian Canovas from the University of Murcia.
Thesis: Epigenetic Impact of assisted reproduction techniques in pigs.
Current Position: ART clinic technician. Spain

Master of Science – non- thesis

- Edgar Soto-Moreno – January 2019 – July 2021.
Current Position: PhD student- Ahmed Balboula Laboratory, Univ. of Missouri
- Chris Kim – August 2020 – December 2021.
Current Position: Associate Scientist. Eurofins BioPharma Product Testing Columbia Inc.

Post Baccalaureate

- Chris Kim – January 2020 – June 2020.
Current Position: Ph.D. student. Division of Animal Sciences. University of Missouri. Rivera Laboratory. Current Position – Research Associate Eurofins.
- Bhaumik Patel (current student in Masters of Public Health Program – University of Missouri veterinary Health Center) – May 2017 – July 2018
Current Position: M.S. student. Division of Animal Sciences. University of Missouri. Rivera Laboratory.
- Franklin Echevarría– University of Missouri-Columbia (MU) PREP Scholars Program Fellow. August 2010 – July 2011.
Ph.D. Neuroscience. Vanderbilt University. May 2017.
Postdoctoral: Postdoctoral Fellow. Case Western Reserve University

Current: Clinical Research Coord III. Department of Neurology. University of Florida.

Undergraduate (continued on to do graduate[^]/professional[#] education – [in Ph.D. program^{*}, completed Ph.D^{**}])

- Camryn Habben – January 2022 – May 2024. Biological Sciences
- Abbey LaPlant – February 2024 – present. Undergraduate Research Apprentice. Sophomore Animal Science.
- Selena Escutia – February 2023 – October 2023. Research Apprentice. Freshman Animal Science.
- Ashley Little – August 2022 – September 2022. Sophomore Animal Sciences
- Ruthanne Doebbler – October 2021 – March 2022. Sophomore Biological Sciences.
- Emma Goodwin - August 2021 – May 2022. Freshman Animal Science. Discovery Fellow
- Anna Hagedorn – August 2021 – December 2021. Senior Animal Science
- Maria Velez-Colon[^] - Summer 2021. Undergraduate Researcher PRISE Scholar. University of Puerto Rico Ponce.
- Arelis Acevedo-Santiago[^] - Summer 2021. Undergraduate Researcher PRISE Scholar. University of Puerto Rico Ponce.
- Marinel Ocasio-Rivera^{*}. Summer 2021. Undergraduate Researcher PRISE Scholar. University of Puerto Rico Ponce.
- Faith Korpus – Research Apprentice. Summer 2021. Sophomore Animal Science
- Alondra Figueroa – Freshman Animal Science. January 2020-March 2020.
- Amanda Moreno – Sophomore Animal Science –May 2019 – March 2020.
- Kris Kim[^] – Senior Biochemistry MU and Gyeongsang National University - South Korea – Start date May 2019 – December 2019.
- Monique Ferrell – Summer Intern Life Sciences Undergraduate Research Program Fellow – Lincoln University, Missouri –May 2019 - July 2019
- Ali Patten[#] – Senior Animal Science – Start Date August 2018 – May 2019.
- Carla Reyes Colon^{*} (Miller Intern – University of Puerto Rico- Mayagüez). Miller Intern participating in the Life Sciences Undergraduate Research Opportunity Program - summer 2018.
- Olivia Styron (Junior/Senior - Biology Major) – October 2016 – July 2018
- Erin Hediger[^] – (Junior – Biology Major) – October 2017 - present
- Logan Womack (Freshman - Animal Science Major) –January 2017 – August 2017
- Sean Utlely – Department of Biochemistry. January 2016-May 2016.
- Collen Hayes – Agriculture – Truman University. August 2015 – December 2016.
- Collin Morris[#] – Department of Biological Sciences. August 2013 – December 2014.
- Jessica Holman - Division of Animal Sciences – September 2014 – December 2014.
- Laura Moon[#] – Department of Biological Engineering. Howard Hughes Medical Institute Apprentice and Fellow – August 2012 – May 2014.
- Lauren Anderson^{*} – Division of Animal Sciences. December 2013 – May 2014.
- Jasmine Randle - EXPRESS Program student – February 2013 – September 2013.
- Jordan Thomas^{**} (MU AnSci) - Spring 2010 – December 2011. B.S. Animal Science December 2011.
- Tricia Rowilson^{**} (MU AnSci) - Fall 2008 to May 2010. B.S. Animal Science, May 2010.
- Rachel Zelenak[^] (MU AnSci) – Fall 2008. B.S. Animal Science, December 2008.

- Emily Medlin** (North Carolina State University AnSci) - Miller Intern participating in the Life Sciences Undergraduate Research Opportunity Program -summer 2008.

Postdoctoral Mentoring

- Pavla Brachova, Ph.D. – Dr. Lane Christenson Laboratory – University of Kansas Medical Center. K99 award Mentor
- Sofia Ortega, Ph.D. – Dr. Spencer Laboratory – Preparing Future Faculty Mentor – 2017-2019.

Graduate Student Committees

Intramural

Ph.D. – current

- Ruth Opoku - Doctor of Philosophy student in the Department of Neuroscience – Laura Schulz Laboratory. 2022-present.

M.S. – graduated

- Jessica Kincade - Master of Science student in the Department of Animal Sciences – Ahmed Balboula Laboratory
- Raissa Cecil - Master of Science student in the Department of Animal Sciences - Randall Prather Laboratory. Not present during the defense due to being on sabbatical.
- Jennifer Teson – Master of Science student in the Department of Animal Sciences - Randall Prather Laboratory. Defended October 2013.
- Julie Birt - Master of Science student in the Department of Animal Sciences - Kathy Sharpe-Timms Laboratory. Defended – December 2010.
- Kyle Dobbs - Master of Science student in the Department of Animal Sciences - Randall Prather laboratory. Defended - May 2010.

Ph.D. – graduated

- Ryan Finnerty – Doctor of Philosophy Translational Biosciences. Dr. Winuthayanon Lab. 2022 - present
- Taeson Wu - Doctor of Philosophy student in the Department of Neuroscience – David Beversdorf Laboratory. 2018-May 2023.
- Celia Alpuche – Doctor of Philosophy candidate in the Department of Romance Language – Guadalupe Perez-Anzaldo Mentor. 2018-2022
- Max R. Highsmith, Doctor of Philosophy student in the Department of Mathematics. Jianlin (Jack) Cheng Laboratory. 2020 - 2021
- Jing Xie - Doctor of Philosophy student in the Department of Statistics. Tieming Ji Laboratory. 2019 – 2021.
- Rowen Karvas - Doctor of Philosophy candidate in the Department of Biological Sciences – Laura Schulz Laboratory. 2017-2020
- Rachel Richardson - Doctor of Philosophy student in the Department of Psychology - Todd Schachtman Laboratory – 2016-2019
- Reina Muro – Doctor of Philosophy candidate in the Department of Romance Language – Guadalupe Perez-Anzaldo Mentor. 2018
- Geriailisa Caesar - Doctor of Philosophy student in the Department of Biological Sciences – Laura Schulz Laboratory. 2013-2018.

- Ho-Hsiang Wu – Doctor of Philosophy student in the Department of Statistics. Tieming Ji Laboratory. 2015-2016
- Ming Tao Zao - Doctor of Philosophy student in the Department of Animal Sciences – Randall Prather Laboratory. 2010-2013
- Shawn Zimmerman - Doctor of Philosophy student in the Department of Animal Sciences - Peter Sutovsky Laboratory. 2009-2012.

Extramural

- Maricarmen Colon - Doctor of Philosophy student in the Department of Microbiology - Ponce School of Medicine, Ponce, PR - Dr. Idhaliz Flores laboratory. 2009-2012.

Other

- Haruyo Matsuyama - Doctor of Philosophy student in the Department of Biochemistry - Michael Roberts Laboratory. 2009-2012.

External Examiner

- Simone Lafontaine – Marc Andre Sirard Laboratory. University of Laval. PhD defense. April 18, 2023.

Faculty Mentoring

- Chair of faculty mentoring committee - Sofia Ortega, Ph.D. Assistant professor of Animal Science. March 2020 – July 2022

SERVICE

Department Service

Departmental Committees

- Promotion and Tenure Committee Chair – 2023-present
- Miller Fellowship Committee Chair – August 2020 - present
- Graduate Student Grievance Committee – 2020 - 2021
- Awards Committee - September - 2019 - 2021
- Academic Affairs Committee – January 2019- 2021
- Position Search Committee: Animal Science Position Title: Assistant Professor - reproductive biology/genomics 2018
- Animal Science Newsletter committee – 2018 - to 2020
- Lawrence and Louise Stark Student Aid Fund committee chair – January 2018 to present
- Division of Animal Sciences Promotion and Tenure Committee – 2016 – present
- Miller Fellowship Committee Alternate – 2016 - 2020
- Animal Reproductive Biology Seminar Series Coordinator – May 2013 to August 2014
- Division of Animal Sciences Graduate Committee Chair – August 2013 – July 2015
- Division of Animal Sciences strategic planning effort – January 2012
- Division of Animal Sciences Director search committee – June 2011 – June 2012
- Department Graduate Committee – 2008 – 2016.
- Position Search Committee for job description ID: 1505331 - Department: Animal Science Position Title: Assistant Professor - reproductive biology/genomics 2008-2009.

Extension

- Regional Livestock Specialist In-Service Training. Presentation title - "Large Offspring Syndrome". Division of Animal Sciences University of Missouri. February 2019.
- Regional Livestock Specialist In-Service Training. Presentation title - "Epigenetics in livestock species: examples and opportunities". Division of Animal Sciences University of Missouri. February 2011.

Graduate and Undergraduate groups

- Graduate Forum PhD ePoster Judge – January 2021
- Academic Quadrathlon Oral Presentation judge – 2008-2016, 2020, 2021
- Graduate student travel fund committee judge - 2012, 2013, 2014
- Graduate student symposium poster presentation judge - 2008, 2011, 2014, 2015, 2021
- Graduate student symposium oral presentation judge – 2010

Undergraduate advising

- Academic year 2023 - 2024 – 19 students
- Academic year 2022 - 2023 – 19 students
- Academic year 2021 - 2022 – 17 students
- Academic year 2020 - 2021 – 22 students
- Academic year 2019 - 2020 – 15 students
- Academic year 2018 - 2019 – 15 students
- Academic year 2017 - 2018 – 17 students
- Academic year 2016 - 2017 – 18 students
- Academic year 2015 - 2016 – 20 students
- Academic year 2014 - 2015 – 20 students
- Academic year 2013 - 2014 – 20 students
- Academic year 2012 - 2013 – 20 students
- Academic year 2011 - 2012 – 20 students
- Academic year 2010 - 2011 – 17 students
- Academic year 2009 - 2010 - 16 students
- Academic year 2008 - 2009 - 10 students

College (College of Agriculture food and Natural Resources)

- CAFNR Diversity and Inclusion committee member – 2019-2021.
- Search Committee - Director of CAFNR International Programs – Spring 2019
- Captive Wildlife Minor Internship Committee – 2018-present
- Co-Chair - Diversity and Inclusion committee -- November 2015 – 2019.
- CAFNR International Education Committee. 2016

University Service

- Mizzou Forward Undergraduate Training Grant Developer and lead – 2022 - present
- MU Grad School Recruiting – SACNAS 2022 – Puerto Rico – October 2022
- MU Faculty Council on University Policy – Academic Affairs committee Chair, Aug 2022 - 23
- University of Missouri Research Council Review panel member. 2021-2024.
- Internal reviewer - University of Missouri Office of Service Learning – Program Review. December 2020-January 2021

- Board of Directors – Cambio Center, University of Missouri. Fall 2020 – present.
- Office of Undergraduate Research Program Review Meeting #2 (Mentors) - November 2020.
- MU Faculty Council on University Policy – Students Affairs committee, Sept 2020 – July 2022
- MU Faculty Council on University Policy - CAFNR representative – August 2020 – 2023
- Position Search Committee. Department: Obstetrics and Gynecology. University of Missouri School of Medicine. Position Title: Assistant Professor – Epigenetics in ObGyn. Spring-Fall - 2017
- MU Committee on Faculty Responsibility. 2016 – 2017
- Second Mizzou Epigenetics Day Symposium - Chair - August 2015 – Nov 2016.
- MU Life Sciences & Society Program 11th Annual Symposium. The Epigenetics Revolution: Nature, Nurture and What Lies Ahead - Organizing committee. April 2015
- University of Missouri Epigenetics Group monthly chalk talk coordinator – 2014 to present
- First Mizzou Epigenetics Day Symposium - Chair - May 2014 – Nov 6 2014.
- First Mizzou Epigenetics Day Symposium – Poster Judge. Nov 6 2014
- 2014 NIH Graduate & Professional School Fair, NIH campus in Bethesda, Maryland – July 16, 2014
- Undergraduate Research & Creative Achievements Forum – Judge 2014
- MU President Tim Wolfe Faculty Conversations - MU newly hired-newly tenured. April 2012, 2013
- Missouri Life Sciences Week at Mizzou Poster Presentation Judge – April 2013, April 2014
- Medical Pharmacology and Physiology Journal Club (course no. MPP9422). Oct. 2011.
- Undergraduate Research & Creative Achievements Forum – Head Judge. April 2011, 2012
- NIH's Initiative for Maximizing Student Diversity Program Advisory Committee. 2011-2015.
- Ethical Conduct of Research (BSC/BCH 8060) course - Ethical Conduct of Research class – February 2010 - present
- Association of Public and Land-grant Universities Academic Programs Summer Summit at The Pennsylvania State University – University of Missouri representative – June 2010.

Student Organization

- Interdisciplinary Reproduction and Health Group trainee association – Faculty Advisor – 2017 - 2020
- NEXUS: MU Graduate Student's Science Network – Faculty Advisor. October 2012 - 2015
- Latinx Graduate and Professional Network – Faculty Advisor. April 2011- October 2023

Faculty Organization

- Secretary - Voz Latina (Formerly HLAFFSA): Hispano-American Faculty and Staff Association - August 2012 – February 2013
- Voz Latina (Formerly HLAFFSA): Hispano-American Faculty and Staff Association – Member. February 2013 – present.

National/International

Professional Society (Society for the Study of Reproduction [SSR])

- Society for the Study of Reproduction – Board of Directors - July 2023 – July 2026
- Animal Developmental Origins of Health and Disease Workshop 2024 at SSR Co-Chair – 2023-2024.

- SSR Heritage Committee Chair–July 2022 - present
- SSR Heritage Committee Co-Chair– July 2021 – July 2022
- SSR Heritage Committee – July 2019 - 2021
- SSR Bylaws Committee Past Chair – 2018 - 2019
- SSR Bylaws Committee Chair – 2016-2018
- SSR Diversity Committee Co-Chair – 2014 - 2016
- SSR 2014–2015 Annual Meeting/Industrial Relations Subcommittee – 2014 - 2015
- SSR 2014–2015 Local Arrangements Committee – 2013 - 2015
- SSR Diversity Committee - 2013-2014
- SSR representative at the 2013 SACNAS National Conference - October 2013
- SSR Bylaws committee member – 2011-present
- SSR Minority Committee - 2013 - present
- SSR Membership Committee - 2011 – 2012.
- Member of the Trainee Affairs Committee Society for the Study of Reproduction - 2007-2008
- Member Minority Affairs Committee Society for the Study of Reproduction - 2006-2007
- Minisymposium [*Determinants of Preimplantation Embryonic Development*] Co-Chair for the 38th Annual Society for the Study of Reproduction Meeting - Quebec City, Canada - July 2005
- Member Education Committee Society for the Study of Reproduction - 2002-2004
- Platform Session [*Sperm-Egg Binding and Egg Activation*] Co-Chair for the 35th Annual Society for the Study of Reproduction Meeting - Baltimore, Maryland – 2002

Advisory Board

- External Advisory Board Member - AFRODITA (Advancing Fertility and Reproduction through Dedicated and Innovative Technological Applications) Doctoral Network. An European Union funded project. 2023-present

Mentoring

- 2020 Virtual Greenwald Symposium Trainee Mentor breakout sessions. October 2020
- Society for the Study of Reproduction "Lunch with the Mentor". Pittsburgh, PA 2009.

External Review

- Promotion to Associate Professor Package - University of California Davis
- Promotion to Associate Professor Package - Utah State University
- Promotion to Associate Professor Package - DePaul University
- Promotion to Research Associate Professor Package - University of Miami.

Editorial

- Editorial board – Academic Editor *PLOS Biology*. January 2020-present
- Editorial Board - Section Editor for the areas of developmental and reproductive epigenetics and epigenetics of aging. *Epigenetics Insights*. December 2018 - present
- Editorial Board – *Reproduction* – January 2015 to December 2018
- Editorial Review Board - *Environmental Epigenetics* – May 2015 - present
- Associate Editor – *Molecular Reproduction and Development* – July 2014 to present
- Guest Editor - Special Issue: From Germ Cell to Implantation: The Epigenetic Story. *Molecular Reproduction and Development*. Volume 81, Issue 2. February 2014

- Section Editor for the Embryo Culture section - International Embryo Transfer Society annual meeting. 2011.

National and International Meeting Judge

- Sigma Xi – Student Research Showcase: a competition for virtual research presentations. March 2013.

Reviewer

Grant Proposal Reviews

National

- USDA, National Institute of Food and Agriculture and Food Research Initiative Animal Health and Production and Animal Products: Animal Reproduction. 2021
- NIH - Cellular, Molecular and Integrative Reproduction Study Section, Center for Scientific Review – ***permanent member*** July 2018 - June 2024.
- NIH P50 Center for Research, Innovation and Training in Reproduction and Infertility - Jan-March 2018
- NIH - Cellular, Molecular and Integrative Reproduction Study Section – January-February 2018
- NIH study section - Developmental Origins of Health and Disease: Epigenetic Modification in Gametogenesis and Transgenerational Inheritance. 2015
- Agricultural Experiment Station - College of Agricultural Sciences. University of Puerto Rico-Mayaguez. Fall 2015.
- NIH P50 study section - Children’s Environmental Health and Disease Prevention Research. 2015
- NIH study section - Developmental Origins of Health and Disease: Epigenetic Modification in Gametogenesis and Transgenerational Inheritance. 2014
- National Institute of Food and Agriculture, Animal Reproduction panel study section. 2010

International

- Canadian Institutes of Health Research “Catalyst Grant: Sex as a Variable in Biomedical Research “funding opportunity – January-April 2018
- Research Foundation Flanders (FWO) – July 2016.
- The Science Foundation Ireland (SFI) Investigators Programme. October 2015
- UK SBS Grants Pre-Awards – October 2014
- The Marsden Fund - Royal Society of New Zealand. 2013
- The SVSE6 Evaluation Committee of the French National Research Agency (ANR). 2013 edition of the “Blue Sky” (Blanc) program. 2013.
- Leaders Opportunity Fund of the Canada Foundation for Innovation. 2012.
- BARD the United States - Israel Binational Agricultural Research & Development Fund. 2008.

Conference-related Abstract and Manuscript Reviewer

- Section Chair for Periconceptional/Fetal Programming, International Embryo Technology Society 2021-2022
- Abstract review panel for the 53rd Annual SSR Meeting (2020)

- Abstract review panel for the 49th Annual SSR Meeting (2016)
- Review manuscript – 9th International Ruminant Reproduction Symposium, 2014
- Abstract for the 9th International Ruminant Reproduction Symposium, 2014
- Review manuscript – American Association of Animal Science. 2012
- Abstracts for the 45th Annual Meeting of SSR - Epigenetics section SSR 2012
- Abstract review panel for the 35th Annual AAR Meeting (2002)

Manuscript Reviews – ongoing

Animal Reproduction, Biology of Reproduction, BMC Developmental Biology, Clinical Epigenetics, DNA and Cell Biology, Endocrinology, Environmental Epigenetics, Epigenetics, Epigenetics Insights, FASEB Journal, Fertility and Sterility, Human Molecular Genetics, Human Reproduction, Human Reproduction Update, International Journal of Andrology, Journal of Animal Science, Journal of Assisted Reproduction and Genetics, Livestock Science, Molecular and Cellular Endocrinology, Molecular Reproduction and Development, PLOS Biology, PLOS One, PLOS Genetics, PNAS, Reproduction, Reproductive Biomedicine Online, Reproduction, Fertility and Development, Reproductive Toxicology, Reproductive Biology and Endocrinology, Research Communications, Scientific Reports.

Professional Development

Extramural

- Frontiers in Reproduction, Marine Biological Laboratory, Woods Hole, MA (2007)
- The Genome Access Course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (2007)

Intramural

1. National Science Foundation Mizzou ADVANCE Mentoring Program. Fall 2009 - Spring 2010.
2. College of Agriculture Food and Natural Resources Teachers College. Spring 2009 - Spring 2010.
3. University of Missouri Grant Writing Institute. Summer 2008.
4. University of Missouri Colleague Circle Mentoring Program. Fall 2007 - Spring 2008.

Community Service

- Dog Therapy. Volunteer with PALS (UM Vet Health Center) and WAGS (UM Medical Center) by bringing my certified pet therapy dog to do hospital visits to patients. May 2017 – February 2020
- Columbia Aquatic Restoration Project - Columbia, MO - 2008 to 2010
- Unity Center of Columbia - Landscaping team co-chair - 2008 to 2010
- Bi-National Health week volunteer – Columbia, MO – 2007

Other Interests

- Columbia Civic Orchestra. Play the Viola. – Columbia, MO (2007-2019)
- Unity Center of Columbia hand bell/chime choir and quartet (2008-2014)
- 9th Street Philharmonic Orchestra. Viola. Columbia, MO (2008-2011)

Languages

- Spanish
- English

THESES

Ph.D.

Cellular, Subcellular, and Developmental responses of two-cell bovine embryos to a physiologically relevant heat shock. Dissertation. University of Florida. Gainesville, Florida. 2003.

M.S.

A comparison of preimplantation development of embryos from Chinese Meishan and Yorkshire pig breeds. Thesis. Iowa State University. Ames, Iowa. 1995.

PUBLICATIONS

ORCID - 0000-0002-9832-9618

[Google Scholar](#)

***Corresponding author**

RIVERA LAB PUBLICATIONS

In preparation

- Chris Kim, Kira Marshall, Mamun Almamun, Christine Spinka, Veronica Negron, **Rocío Rivera***. Effects of Superovulation and Absence of FSH β on Global DNA Methylation of Mouse Oocytes.

Submitted/Under Review

- Yahan Li, Anna Goldkamp, Ping Xiao, Frimpong Boadu, Jianlin Cheng, Darren Hagen, Jennifer Kalish, and **Rocío Melissa Rivera***. The counterpart congenital overgrowth syndromes Beckwith-Wiedemann Syndrome in human and large offspring syndrome in bovine involve alternations in DNA methylation, transcription, and chromatin configuration. [MedRxiv](#) – Dec 16, 2023. Submitted to Advanced Science – Dec 2023.

In Press

1. Fei Sun, Nourhan Nashat Ali, Daniela Londoño-Vásquez, Constantine A. Simintiras, Huanyu Qiao, M. Sofia Ortega, Yuksel Agca, Masashi M. Takahashi, **Rocío M. Rivera**, Andrew M. Kelleher, Peter Sutovsky, Amanda L. Patterson, Ahmed Z. Balboula. Increased DNA damage in full-grown oocytes is correlated with diminished autophagy activation. Nature Communications.
2. Nava-Trujillo H, Donnelly C.G, **Rivera RM***. **Abnormal offspring syndrome. Book Chapter:** Biotechnologies applied to animal reproduction. Editors: Gardon Juan Carlos and Katy Satue.

Editorial and other Publications

3. **Rivera RM***. The epigenetic story. *Mol Reprod Dev.* 2014. PubMed PMID: 24519952.
4. Marshall, K.L. and **Rivera, R.M***. When six is not a half dozen: Representation of changes in H4K5ac during meiotic progression in mouse oocytes. *Visions: The Art of Science. Mol Reprod Dev.* Volume 82, Issue 1, 2014

Reviews, Proceedings and Book Chapters

5. **Nava-Trujillo H, Martínez Bello D, Rivera RM***. 2023. Abnormal calf syndrome. Proceedings of 2023 AETA and CETA/ACTE Joint Convention. Orlando-Florida, US.
6. Hector Nava-Trujillo and **Rocío M Rivera***. Large offspring syndrome in ruminants: current status and prediction during pregnancy. *Animals.* 2023 PMID: 37567678
7. **Rivera, R.M***, Donnelly, C. G, Patel, B.N., Li, Y., and Soto-Moreno E.J. Abnormal Offspring Syndrome. Chapter 71, *Bovine Reproduction.* 2021
8. **Rivera, R.M***, and Donnelly, C. G. Genomic Imprinting, Epigenetics and Abnormal Offspring Syndrome. **Proceedings.** American Embryo Transfer Association & The Canadian Embryo Transfer Association Joint Annual Convention. October 2020
9. **Rivera, Rocio Melissa***. Consequences of assisted reproductive techniques on the embryonic epigenome in cattle. *Reproduction, Fertility and Development,* 2020. 32, 65–81.
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11. **Rivera, Rocio Melissa***. "The sperm meets the egg." Chapter 5. Pages 33-37. "Dairy Cattle Fertility," copyright 2020 by W.D. Hoard & Sons Company. ISBN 978-0-9960753-3-6 Library of Congress Control Number 2020903580
12. Tríbulo, Paula, **Rivera, Rocío M.**, Ortega Obando, Martha Sofia, Jannaman, Elizabeth, and Hansen, Peter J. Production and Culture of the Bovine Embryo. *Methods Mol Biol.* 2019;2006:115-129. doi: 10.1007/978-1-4939-9566-0_8. PMID: 31230276
13. Marshall, K.L. and **Rivera, R.M***. The effects of superovulation and reproductive aging on the epigenome of the oocyte and embryo. Review. *Mol Reprod Dev.* 2018 Review. PMID: 29280527
14. **Rivera RM*** and Ross, J. Epigenetics in fertilization and preimplantation embryo development. Special issue on Systems Biology and Reproductive Biology. *Prog Biophys Mol Biol.* 2013. Review. PubMed PMID: 2345446
15. Huffman, S.R., Almamun, Md., **Rivera, R.M***. Methods in Molecular Biology, Imprinting Protocols, Chapter 13, Isolation of RNA and DNA from single preimplantation embryos and small number of mammalian oocytes for imprinting studies. *Methods Mol Biol.* 2012. PMID: 22907499

16. **Rivera, R.M*** and Bennett, L. Epigenetics in humans: an overview. *Curr Opin Endocrinol Diabetes Obes.* 2010. Review. PMID: 20962634.
17. **Rivera, RM***. Epigenetic aspects of fertilization and preimplantation development in mammals: lessons from the mouse. *Syst Biol Reprod Med.* 2010. Review. PMID: 20849224.

Refereed Journals

18. Taeseon Woo, Candice King, Nick I. Ahmed, Madison Cordes, Saatvika Nistala , Matthew J. Will, Clark Bloomer, Nataliya Kibiryeveva, **Rocio Rivera**, Zohreh Talebizadeh, David Q. Beversdorf. microRNA as a maternal marker for prenatal stress-associated ASD, evidence from a murine model. *J Pers Med.* 2023. PMID: 37763179
19. Mohamed F. Abouelezz, Masashi Takahashi, **Rocio M. Rivera***, Ahmed Z. Balboula*. Cathepsin L is crucial for bovine oocyte maturation and preimplantation embryo development. *Current Biology.* 2023. PMID: 37417221
20. Anna K. Goldkamp, Yahan Li, **Rocío M. Rivera**, Darren E. Hagen. Differentially expressed tRNA-derived fragments in bovine fetuses with assisted reproduction induced congenital overgrowth syndrome. *Frontiers in Genetics.* 2022. PMID: 36457750
21. **Rocío Melissa Rivera*** Anna Katherine Goldkamp, Bhaumik Narendrabhai Patel, Darren Erich Hagen, Edgar Joel Soto-Moreno, Yahan Li, Chris Kim, Cliff Miller, Fred Williams III, Elizabeth Jannaman, Yao Xiao, Paula Tribulo, Eliab Estrada-Cortés, Astrid Roshealy Brau-Rodríguez, Peter James Hansen, Zhoulin Wu, Christine Marie Spinka, Neal Martin, and Christine G. Elsik. Identification of large offspring syndrome during pregnancy through ultrasonography and maternal blood transcriptome analyses. *Sci Rep.* 2022 PMID: 35732675
22. Yahan Li, Jordana Sena-Lopes, Pilar Coy-Fuster, **Rocio Melissa Rivera***. Spontaneous and ART-induced large offspring syndrome: similarities and differences in DNA methylome. *Epigenetics.* 2022 PMID: 35466858
23. Yahan Li, Frimpong Boadu, Max R. Highsmith, Darren E. Hagen, Jianlin Cheng, and **Rocío Melissa Rivera***. Allele-specific aberration of imprinted domain chromosome architecture associates with congenital overgrowth syndrome. *iScience.* 2022 PMID: 35542046
24. Anna K. Goldkamp, Yahan Li, Rocio M. Rivera, Darren E. Hagen. Characterization of tRNA Expression Profiles in Large Offspring Syndrome. *BMC Genomics.* 2022. PMID: 35392796
25. Soto-Moreno, E., Balboula, A., Spinka, C., and **Rivera, R.M.*** Serum supplementation during bovine embryo culture increases development and proliferation through autophagy and ER stress regulation. *PLoS One.* 2021. PMID: 34882691
26. Eldin Jasarevic, Patrick Hecht, Kevin Fritsche, David Geary, **Rocio Rivera**, David Beversdorf. Maternal DHA supplementation influences sex-specific disruption of placental

- gene expression following early prenatal stress. *Biology of Sex Differences*. 2021. PMID: 33422127.
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33. Chen Z., Hagen, DE., Ji, T., Elsik, CG., **Rivera, RM***. Global misregulation of genes largely uncoupled to DNA methylome epimutations characterizes a congenital overgrowth syndrome. *Sci Rep*. 2017. PMID: 28978943
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45. Zhao MT, **Rivera RM**, Prather RS. Locus-Specific DNA Methylation Reprogramming During Early Porcine Embryogenesis. *Biol Reprod.* 2013. PMID: 23303676
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ABSTRACTS

RIVERA LAB

Oral Presentations

1. Yahan Li, Frimpong Boadu, Max R. Highsmith, Darren E. Hagen, Jianlin Cheng, and **Rocío Melissa Rivera**. Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. 54th Annual Meeting of the Society for the Study of Reproduction, St Louis, Missouri. December 2021
2. Li, Yahan, Highsmith, Max R., Boadu, Frimpong, Cheng, Jianlin, **Rivera, Rocío Melissa**. Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. DOHaD satellite meeting on the Developmental Origin of Domestic Animal Health and Diseases and Epigenetics. October 2021.
3. María Del Carmen Velez-Colon, M. Sofía Ortega, **Rocío Melissa Rivera**. Characterizing DNA methylation of the LGALS14 promoter in low- and high-fertility bulls and their conceptuses. 8th Annual Summer Research Internship Symposium Research Initiative for Scientific Enhancement (RISE)-Ponce, Puerto Rico. August 2021.
4. Marinel Ocasio-Rivera and **Rocío Melissa Rivera**. Characterization of imprinted gene *MEG3* in large offspring syndrome 8th Annual Summer Research Internship Symposium Research Initiative for Scientific Enhancement (RISE)-Ponce, Puerto Rico. August 2021.
5. María Del Carmen Velez-Colon, M. Sofía Ortega, **Rocío Melissa Rivera**. Characterizing DNA methylation of the LGALS14 promoter in low- and high-fertility bulls and their conceptuses. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.
6. Marinel Ocasio-Rivera and **Rocío Melissa Rivera**. Characterization of imprinted gene *MEG3* in large offspring syndrome. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.

7. Acevedo-Santiago and **Rocio Melissa Rivera**. Characterization of RTL1 imprinted gene expression in Large Offspring Syndrome. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.
8. Yahan Li, Darren E. Hagen, Zhiyuan Chen, Tieming Ji, and **Rocío Melissa Rivera**. Assessment of Misregulated microRNAs and Their Target mRNAs in an Assisted Reproduction-induced Congenital Overgrowth Syndrome in Bovine. The 14th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine, University of Kansas Medical Center, Kansas City, Kansas, October, 2017
9. Zhiyuan Chen, Darren Hagen, Christine Elisk, Tieming Ji, **Rocío Melissa Rivera**. Characterization of genome-wide DNA methylation at base resolution in overgrowth syndrome induced by assisted reproduction. Mizzou Epigenetics Day 2016, University of Missouri, Columbia Missouri, November 2016
10. Chen, Z., Hagen, D., Elisk, C., Ji, T., and **Rivera, R.M.** Characterization of global gene expression and allele-specific expression of ART-induced overgrowth syndrome. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2015.
11. Chen, Z. Hagen, D., Childers, C., Elisk, C., Ji, T. and Rivera R.M. RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. Mizzou Epigenetics Symposium. University of Missouri, Columbia MO. November 6, 2014.
12. Chen, Z. Hagen, D., Childers, C., Elisk, C., Ji, T. and **Rivera R.M.** RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. Society for the Study of Reproduction 47th Annual Meeting, in Grand Rapids, Michigan. July 2014
13. **Rivera, RM.** 2013. Large offspring syndrome: a bovine model for the human loss-of-imprinting overgrowth syndrome Beckwith-Wiedemann. Frontiers in Reproduction 2013 Symposium.
14. **Rivera, RM.** 2013. Bovine fetuses with phenotypic characteristics similar to those reported for the human overgrowth condition Beckwith-Wiedemann Syndrome have biallelic expression of the imprinted gene Kcnq1ot1. TM's 2nd World Molecular & Cell Biology Online Conference
15. Schenewerk, A, Huffman, SR, Zhao, G, Martinez-Lemus, L, Rivera, RM. 2012. The Effect of Maternal high fat diet and art on Cardiovascular Outcome in Offspring. Biol Reprod; (1 Supplement) 39
16. Schenewerk AL., Foote, C., Martinez-Lemus L.A., **Rivera, R.M.** The Effect of Maternal High Fat Diet and ART on Cardiovascular Health and Body Weight in Offspring. Rocky Mountain Reproductive Sciences Symposium. Loveland CO. April 2013
17. Negrón Pérez, V, Echevarría, FD, Huffman, SR., **Rivera, RM.** Determination of Allelic Expression of H19 in Pre- and Peri-Implantation Mouse Embryos. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2013.

18. **Rivera, RM.** 2010. Size-Dependent Acquisition of global DNA methylation in oocytes is altered by hormonal stimulation. *Frontiers in Reproduction 2010 Symposium.*
19. **Rivera, RM.** 2009. Epigenetics effects of manipulating mouse oocytes and preimplantation embryos. *Biol Reprod*; 81 (1 Supplement) 9.
20. **Rivera, RM.** 2009. The epigenetic program of preimplantation mouse embryos is altered by assisted reproductive technologies. *The 6th Annual Gilbert S. Greenwald Symposium on Reproduction Abstract book.*

Poster Presentations

21. Nava-Trujillo and **Rocio M Rivera.** Title: DNA methylation level of vulnerable genomic loci associated with large offspring syndrome. 50th Annual Conference of the International Embryo Technology Society. Denver Colorado. January, 2024.
22. Habben, Camryn, Ortega, Sofia, **Rivera, Rocio.** Confirming binding of CTCF in Putative CTCF Binding Sites surrounding the LGALS14 Gene in Fetal Bovine Tissues. Fall Research Day. University of Missouri. December 7, 2023.
23. Habben, Camryn, Ortega, Sofia, **Rivera, Rocio.** Confirming binding of CTCF in Putative CTCF Binding Sites surrounding the LGALS14 Gene in Fetal Bovine Tissues. Fall Research Day. University of Missouri. December 7, 2023.
24. Nava-Trujillo H and **Rivera RM.** DNA methylation level of two vulnerable genomic loci associated with large offspring syndrome. American Embryo Transfer Association Annual Conference. October 2023. Orlando FL.
25. Nava-Trujillo H and **Rivera RM.** DNA methylation level of two vulnerable genomic loci associated with large offspring syndrome. CAFNR Research Symposium. October 2023, Columbia MO.
26. Nava-Trujillo H and **Rivera RM.** Relationship between placental IGF2, and IGF2R and weight of bovine fetuses produced in vivo and in vitro. Animal Sciences Graduate Student Forum. August 2023, Columbia, MO.
27. Camryn Habben, M. Sofia Ortega, **Rocio Melisa Rivera.** Confirming binding of CTCF in Putative CTCF Binding Sites surrounding the LGALS14 Gene in Fetal Bovine Tissues. Life Sciences Undergraduate Research Opportunity Program Symposium - July 2023. Columbia, MO.
28. Nava-Trujillo H and **Rivera RM.** Relationship between placental IGF2, IGF2R, and PHLDA2 and weight of bovine fetuses produced in vivo and in vitro. 11th International Ruminant Reproduction Symposium. Jun 2023 Galway, Ireland.
29. Camryn Habben, Maria C. Velez Colon, M. Sofia Ortega, **Rocio Melisa Rivera.** Determining the cause of Downregulation of the LGALS14 gene in Conceptuses from Low-Fertility Bulls. Spring Research & Creative Achievements Forum/Show Me Research Week. April 2023, Columbia, MO

30. Nava-Trujillo H and **Rivera RM**. Relationship between placental IGF2, and IGF2R and weight of bovine fetuses produced in vivo and in vitro. Spring Research & Creative Achievements Forum/Show Me Research Week. April 2023, Columbia, MO.
31. Mohamed Aboul Ezz, Ahmed Balboula, **Rocio Rivera**. Characterization of Cathepsin L Role in Bovine Oocyte and Preimplantation Embryo Development. Division of Animal Science Graduate Student Forum. University of Missouri. August 2022.
32. Mohamed Aboul Ezz, Ahmed Balboula, **Rocio Rivera**. Characterization of Cathepsin L Role in Bovine Oocyte and Preimplantation Embryo Development. Society for the Study of Reproduction Annual Meeting. Spokane, Washington. July 2022.
33. Camryn Dyan Habben, Godwin Izuchukwu Iroanya, **Rocio Melissa Rivera**, Searching for DNA Sequence Polymorphisms Between C57BL/6J and CF1 Mice at the H19 Imprinted Locus. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2022.
34. Li, Yahan, Highsmith, Max R., Boadu, Frimpong, Cheng, Jianlin, **Rivera, Rocío Melissa**. Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. Society for the Study of Reproduction Annual Meeting. St Louis, MO. Dec 2021
35. Kim, Chris, Almamun, Mamun, and **Rivera, Rocio Melissa**. Effects of stage of the estrous cycle and superovulation on DNA methylation in mouse oocytes and granulosa cells. Society for the Study of Reproduction Annual Meeting. St Louis, MO. Dec 2021
36. Jessica Kincade, Avery Hlavacek, Rocio M. Rivera, Ahmed Z. Balboula. Central Nucleus Positioning in Murine Oocytes is Achieved by F-actin and Maintained by Microtubules to Avoid Erroneous Chromosome Segregation. Society for the Study of Reproduction Annual Meeting. St Louis, MO. Dec 2021
37. Li, Yahan, Highsmith, Max R., Boadu, Frimpong, Cheng, Jianlin, **Rivera, Rocío Melissa**. Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. DOHaD satellite meeting on the Developmental Origin of Domestic Animal Health and Diseases and Epigenetics. October 2021.
38. María Del Carmen Velez-Colon, M. Sofía Ortega, **Rocío Melissa Rivera**. Characterizing DNA methylation of the LGALS14 promoter in low- and high-fertility bulls and their conceptuses. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.
39. Marinel Ocasio-Rivera and **Rocío Melissa Rivera**. Characterization of imprinted gene *MEG3* in large offspring syndrome. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.
40. Acevedo-Santiago and **Rocio Melissa Rivera**. Characterization of RTL1 imprinted gene expression in Large Offspring Syndrome. Undergraduate Research & Creative Achievements Forum. University of Missouri. July 2021.

41. Yahan Li, Y., and **Rivera, R.M.** Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. Division of Animal Sciences Virtual Graduate Research Forum, University of Missouri, Columbia. Missouri, January 2021
42. Chris Kim, Md.Almamun, and **Rocío Rivera.** Effects of superovulation on global DNA methylation in mouse oocytes. Division of Animal Sciences Virtual Graduate Research Forum, University of Missouri, Columbia. Missouri, January 2021
43. Bhaumik Patel, Christine Spinka, Darren Hagen, Christine Elsik, and **Rocío Melissa Rivera.** Efforts to identify large offspring syndrome by ultrasonography and maternal blood markers. Virtual MU Animal Science Graduate Forum. January 2021.
44. Soto-Moreno, E., Balboula, A., Spinka, C., and **Rivera, R.** Effects of serum supplementation of culture medium on bovine preimplantation embryo morphometry and autophagic activity. Division of Animal Sciences Virtual Graduate Research Forum, University of Missouri, Columbia. Missouri, January 2021
45. Edgar J. Soto-Moreno, Ahmed Balboula, Christine Spinka, and **Rocío Melissa Rivera.** Effects of serum supplementation of culture medium on bovine preimplantation embryo morphometry and autophagic activity. 2020 Virtual Symposium 17th Annual Gilbert S. Greenwald Symposium on Reproduction and Perinatal Research. October 8-9, 2020
46. Bhaumik Patel, Christine Spinka, Darren Hagen, Christine Elsik, and **Rocío Melissa Rivera.** Efforts to identify large offspring syndrome by ultrasonography and maternal blood markers. 2020 Virtual Symposium 17th Annual Gilbert S. Greenwald Symposium on Reproduction and Perinatal Research. October 8-9, 2020
47. Yahan Li and **Rocío Melissa Rivera.** Investigation of bovine chromosome architecture and its involvement in large offspring syndrome. 2020 Virtual Symposium 17th Annual Gilbert S. Greenwald Symposium on Reproduction and Perinatal Research. October 8-9, 2020
48. Edgar J. Soto-Moreno, Ahmed Balboula, Tieming Ji, and **Rocio Melissa Rivera** – Effects of serum supplementation of culture medium on bovine preimplantation embryo morphometry and autophagic activity. SSR 2020. Not presented due to COVID19.
49. Bhaumik Patel, Shun Rao, Tieming Ji, **Rocio Melissa Rivera** – Efforts to identify large offspring syndrome by ultrasonography and maternal blood markers. SSR 2020. Not presented due to COVID19.
50. Edgar J. Soto-Moreno, Ahmed Balboula, Tieming Ji, and **Rocio Melissa Rivera** – Effects of serum supplementation of culture medium on bovine preimplantation embryo morphometry and autophagic activity. GPC – University of Missouri. 2020. Not presented due to COVID19.
51. Bhaumik Patel, Shun Rao, Tieming Ji, **Rocio Melissa Rivera** – Efforts to identify large offspring syndrome by ultrasonography and maternal blood markers. GPC – University of Missouri. 2020. Not presented due to COVID19.

52. Hagen, D.E., Goldkamp, AK, Ji, Tieming, **Rivera, RM.** Prediction and Quantitative Expression of tRNA Genes in Bovine Tissues. ISAG 2019. Lleida, Spain
53. Anna K. Goldkamp, Yahan Li, Qianbo Sun, Darren E. Hagen, **Rocio M. Rivera**, Lan Zhu. Differentially expressed tRNA fragments in bovine fetuses with assisted-reproduction induced congenital overgrowth syndrome. ISAG 2019. Lleida, Spain
54. Monique Ferrell, Edgar Joel Soto-Moreno, **Rocío Melissa Rivera.** Identification of Molecular Pathways Involved in Congenital Fetal Overgrowth in Bovine. 28th Annual NAAHP Conference in New Orleans, LA on November 6-9, 2019
55. Monique Ferrell, Edgar Joel Soto-Moreno, **Rocío Melissa Rivera.** Identification of Molecular Pathways Involved in Congenital Fetal Overgrowth in Bovine. Life Sciences Undergraduate Research Opportunity Program Symposium - Summer 2019.
56. Reyes-Flores, Carla Patricia, Ortega, M. Sofia, Spencer, Thomas E., and **Rivera, Rocío Melissa.** Characterization of the imprinting status of LGALS14 in cattle. Life Sciences Undergraduate Research Opportunity Program Symposium - Summer 2018.
57. Olivia Styron, Kathy Sharpe-Timms, **Rocío Melissa Rivera.** Effects of endometriosis on imprinted DNA methylation in rat embryos: optimization of bisulfite mutagenesis assays. Life Sciences Undergraduate Research Opportunity Program Symposium – Spring 2018.
58. Ogunsan, Oluwateniayo O., Ji, Tieming, **Rivera, Rocio M.**, Elsik, Christine G. Annotating genes within differentially methylated regions of bovine fetuses with Large offspring syndrome. Life Sciences Undergraduate Research Opportunity Program Symposium - Summer 2018.
59. Yahan Li, Darren E. Hagen, Zhiyuan Chen, Tieming Ji, and **Rocío Melissa Rivera.** Assessment of Misregulated microRNAs and Their Target mRNAs in an Assisted Reproduction-induced Congenital Overgrowth Syndrome in Bovine. The 14th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine, University of Kansas Medical Center, Kansas City, Kansas, October, 2017
60. Styron, Olivia S, Li, Yahan, **Rivera, Rocio M.** Assessment of phosphorylated status of the Hippo Pathway effector YAP1 in muscle of ART-induced LOS. Life Sciences Undergraduate Opportunity Program, University of Missouri, July 2017
61. Li, Y., Hagen, D.E., Chen, Z., Ji, T., and **Rivera, R.M.** Assessment of Misregulated microRNAs and Their Target mRNAs in an Assisted Reproduction-induced Congenital Overgrowth Syndrome in Bovine. Division of Animal Sciences Graduate Research Forum, University of Missouri, Columbia. Missouri. May 2017
62. Li, Y., Hagen, D.E., Chen, Z., Ji, T., and **Rivera, R.M.** Assessment of Misregulated microRNAs and Their Target mRNAs in an Assisted Reproduction-induced Congenital Overgrowth Syndrome in Bovine. The 33rd Annual Missouri Life Sciences Week, University of Missouri, Columbia, Missouri. April 2017

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65. Chen Z, Hagen DE, Elsik CG, Ji T, **Rivera RM.** Characterization of genome-wide DNA methylation at base resolution in overgrowth syndrome induced by assisted reproduction. Mizzou Epigenetics Day 2016, University of Missouri, Columbia Missouri, November 2016
66. Li, Y., Hagen, D.E., Chen, Z., and **Rivera, R.M.** Assessment of differentially expressed microRNAs in bovine large offspring syndrome. The 13th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine, University of Kansas Medical Center, Kansas City, Kansas, September 2016
67. Chen Z, Hagen DE, Elsik CG, Ji T, **Rivera RM.** Characterization of genome-wide DNA methylation at base resolution in overgrowth syndrome induced by assisted reproduction. 13th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine, University of Kansas Medical Center, Kansas City, Kansas, September 2016
68. Adonis J, Caesar G, Stuckel AJ, Taylor KH, Chen Z, **Rivera RM,** and Schulz LC. Maternal undernutrition is associated with placental epimutations. Life Sciences Undergraduate Opportunity Program, University of Missouri, July 2016
69. Chen Z, Hagen DE, Wang J, Elsik CG, Ji T, Siqueira LG, Hansen PJ, and **Rivera RM.** Global assessment of imprinted gene expression in the bovine conceptus by next generation sequencing. Missouri Life Sciences Week University of Missouri, Columbia. Missouri, April 2016
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71. Marshall, K. Ji, T. and **Rivera, R.M.** The effects of aging and superovulation on the epigenome of the mouse oocyte. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2015.
72. Chen, Z., Hagen, D., Elsik, C., Ji, T., and **Rivera, R.M.** Characterization of global gene expression and allele-specific expression of ART-induced overgrowth syndrome Society for the Study of Reproduction 48th Annual Meeting, San Juan, Puerto Rico. June 2015.
73. Marshall, K. Ji, T. and **Rivera, R.M.** The effects of aging and superovulation on the epigenome of the mouse oocyte. Society for the Study of Reproduction 48th Annual Meeting, San Juan, Puerto Rico. June 2015.

74. Chen, Z. Hagen, D., Childers, C., Elsik, C., Ji, T. and Rivera R.M. RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. 11th Annual Greenwald Symposium. University of Kansas Medical Center, Kansas City , KS. November 6-7, 2014.
75. Marshall, K. Huffman, S.R. and Rivera, R.M. Comparison of global levels of DNA methylation and Mecp2 between fully grown GV oocytes of young and aged female mice. 11th Annual Greenwald Symposium. University of Kansas Medical Center, Kansas City , KS, November 6-7, 2014.
76. Chen, Z. Hagen, D., Childers, C., Elsik, C., Ji, T. and Rivera R.M. RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. Mizzou Epigenetics Symposium. University of Missouri, Columbia MO. November 6, 2014.
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78. Chen, Z. Hagen, D., Childers, C., Elsik, C., Ji, T. and **Rivera R.M.** RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. 2nd Canadian Conference on Epigenetics: Epigenetics, Eh! Western University - London, Ontario. June 2014
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80. Anderson, L., Jašarević, E., Hecht, P., Beversdorf, D.Q., and **Rivera RM.** Potential rescue of sex-specific stress characteristics in socially deprived mice using supplemental DHA. Advancing Neuroscience at MU Symposium. University of Missouri, June 2014.
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82. Morris C., Chen Z., and **Rivera, RM.** Identifying single nucleotide polymorphisms to determine loss-of-imprinting associated with large offspring syndrome in ruminants. Life Sciences Undergraduate Opportunity Program, Undergraduate Creative Achievements Forum. University of Missouri, April 2014.
83. Anderson, L., Jašarević, E., Hecht, P., Beversdorf, D.Q., and **Rivera RM.** Potential rescue of sex-specific stress characteristics in socially deprived mice using supplemental DHA. Life Sciences Undergraduate Opportunity Program, Undergraduate Creative Achievements Forum. University of Missouri, April 2014.
84. Moon L., Chen Z., and **Rivera, RM.** Confirmation of loss-of-imprinting identified by RNA sequencing in large offspring syndrome in bovine. Life Sciences Undergraduate Opportunity Program, Undergraduate Creative Achievements Forum. University of Missouri, April 2014.

85. Chen, Z. Hagen, D., Childers, C., Elsik, C., Ji, T. and **Rivera R.M.** RNA-Sequencing Analysis of Large Offspring Syndrome in Bovine. Missouri Life Sciences Week at Mizzou. Columbia, MO. April 2014.
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87. Moon, L. Schenewerk, AL, **Rivera, R.M.** Determination of metabolic gene expression profile in mouse blastocysts developed in two suboptimal environments. Life Science Undergraduate Opportunity Program. Summer Undergraduate Forum. University of Missouri. 2013
88. Negrón Pérez, V, Echevarría, FD, Huffman, SR., **Rivera, RM.** Determination of Allelic Expression of H19 in Pre- and Peri-Implantation Mouse Embryos. Rocky Mountain Reproductive Sciences Symposium. 2013. Loveland CO. April 2013
89. Chen, Z, Robbins, KM, Wells, KD, **Rivera, RM.** Large offspring syndrome: a bovine model for the human loss-of-imprinting overgrowth syndrome Beckwith-Wiedemann. Rocky Mountain Reproductive Sciences Symposium. 2013. Loveland CO. April 2013
90. Schenewerk AL., Foote, C., Martinez-Lemus L.A., **Rivera, R.M.** The Effect of Maternal High Fat Diet and ART on Cardiovascular Health and Body Weight in Offspring. Missouri Life Sciences Week at Mizzou. Columbia, MO. April 2013.
91. Negrón Pérez, V, Echevarría, FD, Huffman, SR., **Rivera, RM.** Determination of Allelic Expression of H19 in Pre- and Peri-Implantation Mouse Embryos. Missouri Life Sciences Week at Mizzou. Columbia, MO. April 2013.
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93. Ramirez-Perez F.I., Schenewerk, A.L., Foote, C., Zhao, G., **Rivera R.M.**, Martinez-Lemus, L.A. 2013. Mice Produced by the Use of Assisted Reproductive Technologies from Dams Provided a High-Fat and –Fructose Diet Have Reduced Arterial Vasodilation Responses to Acetylcholine. Experimental Biology April 2013
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95. Chen, Z, Robbins, KM, Wells, KD, **Rivera, RM.** 2012. Bovine Fetuses with Phenotypic Characteristics Similar to those Reported for the human Condition Beckwith-wiedemann Syndrome have Biallelic Expression of the Imprinted gene Kcnq1ot1. Biol Reprod; (1 Supplement) 270

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97. Chen, Z, Robbins, KM, Wells, KD, **Rivera, RM.** Bovine Fetuses with Phenotypic Characteristics Similar to those Reported for the human Condition Beckwith-wiedemann Syndrome have Biallelic Expression of the Imprinted gene Kcnq1ot1. 9th Annual Gilbert S. Greenwald Symposium on Reproduction, Kansas City, Kansas, October 2012
98. Schenewerk, A, Huffman, SR, Zhao, G, Martinez-Lemus, L, **Rivera, RM.** 2012. The Effect of Maternal high fat diet and art on Cardiovascular Outcome in Offspring. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2012
99. Negrón Pérez, V, Echevarría, FD, Huffman, SR., **Rivera, RM.** Determination of Allelic Expression of h19 in Peri-implantation mouse Embryos. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2012
100. Chen, Z, Robbins, KM, Wells, KD, **Rivera, RM.** Bovine Fetuses with Phenotypic Characteristics Similar to those Reported for the human Condition Beckwith-wiedemann Syndrome have Biallelic Expression of the Imprinted gene Kcnq1ot1. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2012
101. Echevarría, FD, Huffman, SR, **Rivera, RM.** The imprinted gene *H19* is biallelically expressed in peri-implantation mouse embryos. Mizzou Advantage in Reproductive Biology Conference, May 2011
102. Robbins, K.M., Wells, K.D., Geary, T., O'Gorman, C., MacNeil, M.D., Smith, M., Pohler K., Jinks, E., and **Rivera, R.M.** Establishment of a phenotypical model of adverse outcomes associated with assisted reproductive technologies Mizzou Advantage in Reproductive Biology Conference, May 2011
103. Almamun, Md. and **Rivera RM.** Size-dependent acquisition of global DNA methylation in oocytes is altered by hormonal stimulation. Mizzou Advantage in Reproductive Biology Conference, May 2011
104. Robbins, K.M., Wells, K.D., Geary, T., O'Gorman, C., MacNeil, M.D., Smith, M., Pohler K., Jinks, E., and **Rivera, R.M.** Establishment of a phenotypical model of adverse outcomes associated with assisted reproductive technologies. Animal Sciences Graduate Research Forum, Columbia, Missouri, May 2011
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111. Rowlison T. and **Rivera RM**. The effects of assisted reproductive technologies on the methionine recycling pathway. *University of Missouri Life Sciences Undergraduate Research Opportunity Program Symposium, 2010.*
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Poster Presentations

113. **Rivera RM**, Bartolomei, MS, Schultz, RM. Effects of *in vitro* culture on genomic imprinting in mouse embryos. *Biology of Reproduction - 2006 Special Issue. Abstract #93 - Oral presentation.*
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125. **Rivera, RM**, Christenson, LK, Youngs, CR Ford, SP. Competitive survival, growth rate and estrogen secretory activity of Meishan and Yorkshire fetuses. 1994. *Journal of Animal Science* 72 (Supplement 1):78
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