Yanghua He, Ph.D.

Assistant Professor in Animal Genomics and Epigenomics
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SUMMARY

The long-term objective of my research program is to study interactions between genetics and environments in animals and humans using genomic and epigenomic approaches to eventually better serve our life and improve the quality of our life. I was well-trained in Genomics and Epigenomics fields with the platforms of Large Next Generation Sequencing (NGS) datasets and high-density genotypes and phenotypes data in animal and human complex diseases and traits for decades. Also, extensive experience in Genome and Epigenome Editing utilizing CRISPR-based technologies was gained at St. Jude Children's Research Hospital to beat children's Sickle Cell Disease, which would be a powerful weapon to use in the post-genome era. Due to this solid background and experience, I am overseeing multiple research projects at UHM regarding the impacts of different diets on human health disparities and the impacts of climate changes on livestock animal production using genomic and epigenomic approaches.

RESEARCH INTERESTS

- Livestock animal production: applying genomics and epigenomics approaches as well as computational methods to improve livestock animal production;
- Diseases: utilizing high throughput sequencing datasets to elucidate the mechanisms of diseases in animals and humans and pinpoint the causal genetic variants of the disease using CRISPR-based technologies;
- Nutrigenomics: studying the mechanisms of how different diets contribute to different phenotypes (eg. BMI for evaluating obesity) based on omics-data.

EDUCATION

2012 **Doctor of Philosophy:** Animal Genetics and Breeding, China Agricultural University, Beijing, China
Dissertation: Epigenetic mechanisms of bovine mastitis

2009 **Master of Science:** Animal Genetics and Breeding, China Agricultural University, Beijing, China
Thesis: Association analysis of gene single nucleotide polymorphisms (SNPs) with milk production traits in Chinese Holstein

2006 **Bachelor of Science:** Animal Science, Inner Mongolia Agricultural University, Inner

Mongolia, China
Emphasis: Computational simulation of cashmere growth of Inner Mongolia white cashmere goats

2005 **Specialist:** Computer Science, Inner Mongolia Agricultural University, Inner Mongolia, China

PROFESSIONAL EXPERIENCE

2021 – Present participate in Multistate Research Projects:

- S1086: Enhancing sustainability of beef cattle production in Southern and Central US through genetic improvement
- NRSP8: National Animal Genome Research Program

2019 – Present Assistant Professor (tenure-track) of Animal Genomics: University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, Department of Human Nutrition, Food and Animal Sciences

Currently working on:

- Project 1: Genetic improvements of Hawaii beef cattle using genomic approaches
- Project 2: Epigenetic regulation during embryonic development in Myostatin transgenic mice

2019 – Present Graduate Faculty (Concurrent Position): Animal Science Program, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, Department of Human Nutrition, Food and Animal Sciences

2019 – Present Graduate Faculty (Concurrent Position): Nutritional Sciences Program, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, Department of Human Nutrition, Food and Animal Sciences

2019 – Present Graduate Faculty (Concurrent Position): Molecular Biosciences and Bioengineering Program, University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, Department of Human Nutrition, Food and Animal Sciences

2017 – 2019 **Postdoctoral Research Associate**: St. Jude Children's Research Hospital, Hematology Department, Memphis, Tennessee, USA

- Project: Epigenome Editing in Children's blood disorders using CRISPR-based techniques

2012 – 2017 **Postdoctoral Research Associate**: University of Maryland, Department of Animal and Avian Sciences, College Park, Maryland, USA

- Project 1: Identification of sputum epigenetic biomarkers of lung cancer
- Project 2: DNA methylation landscape and regulatory elements in chicken germ stem cell differentiation
- Project 3: Epigenetic analysis in SPF chicken lines resistant or susceptible to Marek's disease (MD)
- Project 4: Systems Biology studies of grass-fed and grain-fed beef cattle

2011 – 2012 **Research Assistant**: Qingdao Agricultural University, College of Animal Science & Technology, Qingdao, China

- Project: Molecular improvements and breeding of Chinese fine wool sheep

2007 – 2012 **Graduate Research Assistant** (leading to a PhD degree): China Agricultural University, Beijing, China

2006 – 2007 **Sales Representative**, Beijing Blest Biotechnology Development Co., Ltd. Beijing, China

Honors and awards

2020 A Faculty Travel Grant in the amount of $1,700 from the University of Hawaii at Manoa, supporting the travel for the Plant and Animal Genome XXVIII Conference in San Diego, California, USA

2017 Shaffner Award, **First Place** Presentation of Research in Poultry, 31st Annual Symposium, Department of Animal and Avian Sciences, University of Maryland, USA

2015 Travel fellowship with International Plant & Animal Genome Conference XXIII. Animal Epigenetics workshop, San Diego, CA, USA

2014 Travel scholarship with 10th International Symposium on Marek's Disease and Avian Herpesviruses. East Lansing, MI. USA

2012 Best Ph.D. dissertation Award with honor of China Agricultural University, China

2011 Research Accomplishment Award with honor of China Agricultural University, China

2009 Outstanding Research Award with honor in 7th national academic conference of Cattle Science Association of Chinese Animal and Veterinary Society, Nanjing city, China

2009 Best Paper Award for Master of Science Degree with honor of China Agricultural University, China

Leadership experience

2018 **Organizing Committee and Leadership Committee:** The Conference "International Conference & Exhibition on Genome Science" in San Diego, USA

2018 – 2019 **Secretary:** St. Jude Toastmasters Club, Toastmasters International, St. Jude Club, Memphis, USA
Primary duties: maintain all club records, manage club files, handle club correspondence and take the minutes at each club and executive committee meeting; help the president to make the club get more successes.

2012 – 2017 **Laboratory manager:** University of Maryland, College Park, USA
Primary duties: Lab routine management and maintenance; reagents and lab equipment orders; negotiation with companies; lab environment and safety training; new members training; project progress tracking of graduate students and visiting scholars; troubleshooting of project problems; transfer work with outgoing members; installation, management, and maintenance of our computational server and storage server; edit and revise grant proposals for the supervisor.

2009 – 2012 **Director:** Graduate Student Association, China Agricultural University, Beijing, China
Primary duties: Bridging between the classmates and the Department/the University; helping with psychical and emotional constructions for the classmates; and organizing class activities.

2002 – 2006 **Secretary:** Undergraduate Student Association, Inner Mongolia Agricultural University, Hohhot city, Inner Mongolia, China
Primary duties: Checking the classmates and troubleshooting their problems/issues during the study and organizing class activities.

SCHOLARSHIP

Note: **Bold** indicates the author's name. Asterisk (*) stands for the equal-first author.

Refereed Journal Articles

1. Jose Carrillo; Ying Bai; **Yanghua He**; Yaokun Li; Wentao Cai; Derek M. Bickhart; George Liu; Scott M. Barao; Tad Sonstegard; Jiuzhou Song. Growth curve, blood parameters and carcass traits of grass-fed Angus steer. *The International Journal of Animal Biosciences*. 2021
2. Cunling Jia, Ying Bai, Jianan Liu, Wentao Cai, Lei Liu, **Yanghua He**, and Jiuzhou Song. Metabolic Regulations by lncRNA, miRNA, and ceRNA Under Grass-Fed and Grain-Fed Regimens in Angus Beef Cattle. *Front. Genet*., 04 March 2021. PubMed Central PMCID: PMC7969984
3. Qian Qi, Li Cheng, Xing Tang, **Yanghua He**, Yichao Li, Tiffany Yee, Dewan Shrestha, Ruopeng Feng, Peng Xu, Xin Zhou, Shondra M Pruett-Miller, Ross C. Hardison, Mitchell J. Weiss, Yong Cheng. Dynamic CTCF binding directly mediates interactions among cis-regulatory elements essential for hematopoiesis. ***Blood*** (IF 17.543). DECEMBER 9, 2020. PubMed Central PMCID: PMC7955410
4. Jianan Liu, Fang Liu, Wentao Cai, Cunling Jia, Ying Bai, **Yanghua He**, Weiyun Zhu, Robert W. Li, Jiuzhou Song. Diet-induced changes in bacterial communities in the jejunum and their associations with bile acids in Angus beef cattle. *Animal Microbiome* 2020; 2: 33. PubMed Central PMCID: PMC7807434
5. Hao Bai, **Yanghua He**, Yanli Lin, Qixin Leng, José A Carrillo, Jianan Liu, Feng Jiang, Jilan Chen, Jiuzhou Song. Identification of a novel differentially methylated region adjacent to ATG16L2 in lung cancer cells using methyl-CpG binding domain protein enriched genome sequencing. *Genome*. 2020 Oct 28. PubMed Central PMID: 33113339
6. Hao Bai, **Yanghua He**, Yi Ding, Qin Chu, Ling Lian, Eliyahu M Heifetz, Ning Yang, Hans H Cheng, Huanmin Zhang, Jilan Chen, Jiuzhou Song. Genome-wide characterization of copy number variations in the host genome in genetic resistance to Marek's disease using next generation sequencing. *BMC Genetics.* 2020 Jul 16; 21(1):77. PubMed Central PMCID: PMC7364486
7. Ying Bai, José A. Carrillo, Yaokun Li, **Yanghua He**, Jiuzhou Song. Diet induced the change of mtDNA copy number and metabolism in Angus cattle. *Journal of Animal Science and Biotechnology* volume 11, Article number: 84 (2020). PubMed Central PMCID: PMC7372754
8. Cicera R. Lazzarotto, Nikolay L. Malinin, Yichao Li, Ruochi Zhang, Yang Yang, **Yanghua He**, Xin Lan, Kasey Jividen, Varun Katta1, Natalia G. Kolmakova, Christopher T. Petersen, Qian Qi, Evgheni Strelcov, Samantha Maragh, Giedre Krenciute, Jian Ma, Yong Cheng, Shengdar Q. Tsai. CHANGE-seq reveals genetic and epigenetic effects on CRISPR–Cas9 genome-wide activity. ***Nature Biotechnology*** (IF 36.558). volume 38, (2020) PubMed Central PMCID: PMC7652380
9. **Yanghua He**, Bo Han, Yi Ding, Huanmin Zhang, Li Zhang, Chunfang Zhao, Ning Yang, and Jiuzhou Song. *LincGALMD1* regulates viral gene expression in the chicken. *Frontiers in Genetics*, 10:1122. 2019 doi: 10.3389/fgene.2019.01122. PubMed Central PMCID: PMC6868033
10. Hao Bai, **Yanghua He**, Yi Ding, José A. Carrillo, Huanmin Zhang, Ramesh K. Selvaraj, Jilan Chen, Jiuzhou Song. Allele-Specific Expression (ASE) and Differential Expression (DE) of CD4+ T Cells in response to Marek's Disease Virus Infection. *Genes* 2019, 10, 718; PubMed Central PMCID: PMC6770979
11. Yaokun Li, José A. Carrillo, Yi Ding, **Yanghua He**, Chunping Zhao, Jianan Liu, Linsen Zan, Jiuzhou Song. DNA methylation, microRNA expression profiles and their relationships with transcriptome in grass-fed and grain-fed Angus Cattle rumen tissue. *PLoS One*. 2019 Oct 17;14(10): e0214559. PubMed Central PMCID: PMC6797229
12. Hao Bai, **Yanghua He**, Yi Ding, Shuang Chang, Huanmin Zhang, Jilan Chen, Jiuzhou Song. Parent-of-origin has no detectable effect on survival days of Marek's disease virus infected White Leghorns. *Poultry Science*. 2019 Oct 1;98(10):4498-4503. PubMed Central PMID: 31076761

13. Lingyang Xu, **Yanghua He***, Yi Ding, George E. Liu, Huanmin Zhang, Hans H. Cheng, Robert L. Taylor Jr, Jiuzhou Song. Genetic assessment of inbred chicken lines indicates genomic signatures of resistance Marek's disease. *Journal of Animal Science and Biotechnology*. December 2018, 9:65. PubMed Central PMCID: PMC6136188
14. **Yanghua He**, Qisheng Zuo, John Edwards, Keji Zhao, Jinzhi Lei, Wentao Cai, Qing Nie, Bichun Li, and Jiuzhou Song. DNA Methylation and Regulatory Elements during Chicken Germline Stem Cell Differentiation. *Stem Cell Reports* (IF 7.34). Cell Press. 2018 Jun 5; 10(6): 1793–1806. PubMed Central PMCID: PMC5989647
15. Bo Han, **Yanghua He***, Li Zhang, Yi Ding, Ling Lian, Chunfang Zhao, Jiuzhou Song, and Ning Yang. Long intergenic non-coding RNA *GALMD3* in chicken Marek's disease. *Scientific Reports*. 2017 Aug 31;7(1):10294. PubMed Central PMCID: PMC6868033
16. Lingyang Xu, **Yanghua He***, Yi Ding, Guirong Sun, Jose Carrillo, Yaokun Li, Mona Ghaly, Li Ma, Huanmin Zhang, George Liu, Jiuzhou Song. Characterization of copy number variation's potential role in Marek's Disease. *International Journal of Molecular Sciences*. 2017, 18(5), 1020; PubMed Central PMCID: PMC5454933
17. Tahir Usman, Yachun Wang, Chao Liu, **Yanghua He**, Xiao Wang, Yichun Dong, Hongjun Wu, Airong Liu, Ying Yu. Novel SNPs in IL-17F and IL-17A genes associated with somatic cell count in Chinese Holstein and Inner-Mongolia Sanhe cattle. *Journal of Animal Science and Biotechnology*. Journal of Animal Science and Biotechnology. 2017. 8:5. PubMed Central PMCID: PMC5237346
18. Dong Li, **Yanghua He**, Jiuzhou Song, Yani Zhang and Bichun Li. Regulation of crucial lncRNAs in differentiation of chicken embryonic stem cells to spermatogonia stem cells. *Animal Genetics*. 2017 Apr;48(2):191-204. PubMed Central PMID: 27862128
19. **Yanghua He**, Minyan Song, Yi Zhang, Xizhi Li, Jiuzhou Song, Yuan Zhang and Ying Yu. Whole-genome regulation analysis of histone H3 lysin 27 trimethylation in subclinical mastitis cows infected by Staphylococcus aureus. *BMC Genomics*. 2016 Aug 8; 17:565. PubMed Central PMCID: PMC4977872
20. Minyan Song, **Yanghua He**, Huangkai Zhou, Yi Zhang, Xizhi Li, Ying Yu. Combined analysis of DNA methylome and transcriptome reveal novel candidate genes relevant with susceptibility to bovine *Staphylococcus aureus* subclinical mastitis. *2016 Jul 14; 6:29390.* PubMed Central PMCID: PMC4944166
21. José A. Carrillo, **Yanghua He**, Yaokun Li, Richard A. Erdman, Tad Sonstegard, Jiuzhou Song. Integrated metabolomic and transcriptome analyses reveal finishing forage affects metabolic pathways related to beef quality and animal welfare. *Scientific Report*s 2016 May 17; 6:25948. PubMed Central PMCID: PMC4869019
22. **Yanghua He**, Yi Ding, Fei Zhan, Huanmin Zhang, Gangqing Hu, Keji Zhao, Ning Yang, Jiuzhou Song. The conservation and signatures of lincRNAs in Marek's disease of chicken. *Scientific Reports*, 2016 Jan 27;6:19422. PubMed Central PMCID: PMC4728745
23. Nan Liu, J. N. He, W. M. Yu, Kaidong Liu, Ming Cheng, Jifeng Liu, **Yanghua He**, Jinshan Zhao, X. X. Qu. Transcriptome analysis of skeletal muscle at prenatal stages in Polled Dorset versus Small-tailed Han sheep. *Genet Mol Res.* 2015 Feb 6;14(1):1085-95. PubMed Central PMID: 25730048
24. Yaokun Li, José A. Carrillo, Jianan Liu, George Liu, **Yanghua He**, Yi Ding, Chunping Zhao, Linsen Zan, and Jiuzhou Song. Transcriptomic profiling of spleen in grass-fed and grain-fed Angus cattle. *PLoS One.* 2015 Sep 14;10(9): e0135670. PubMed Central PMCID: PMC4569079
25. José A. Carrillo, **Yanghua He**, Juan Luo, Kimberly R. Menendez, Nathaniel L. Tablante, Keji Zhao, Joseph N. Paulson, Bichun Li, Jiuzhou Song. Methylome Analysis in Chickens Immunized with Infectious Laryngotracheitis Vaccine, *PLoS One.* 2015 Jun 24;10(6): e0100476. PubMed Central PMCID: PMC4481310
26. Yaokun Li, José A. Carrillo, Yi Ding, **Yanghua He**, Chunping Zhao, Linsen Zan, and Jiuzhou

Song. Ruminal Transcriptomic Analysis of Grass-Fed and Grain-Fed Angus Beef Cattle. *PLoS One.* 2015 Jul 21;10(7): e0134067. PubMed Central PMCID: PMC4510587

27. Apratim Mitra, Juan Luo, **Yanghua He**, Yulan Gu, Huanmin Zhang, Keji Zhao, Kairong Cui and Jiuzhou Song. Histone modifications induced by MDV infection at early cytolytic and latency phases. *BMC Genomics.* 2015 Apr 18;16(1):311. PubMed Central PMCID: PMC4404578
28. **Yanghua He**, Jose A. Carrillo, Juan Luo, Yi Ding, Fei Tian and Jiuzhou Song. Genome-wide mapping of DNase I hypersensitive sites and association analysis with gene expression in MSB1 cells. *Front Genet*. 2014 Oct 13; 5:308. PubMed Central PMCID: PMC4195362
29. Nan Liu, Hegang Li, Kaidong Liu, Juanjuan Yu, Ming Cheng, Wei De, Jifeng Liu, Shuyan Shi, **Yanghua He** and Jinshan Zhao. Differential expression of genes and proteins associated with wool follicle cycling. *Mol Biol Rep*. 2014 Aug;41(8):5343-9. PubMed Central PMID: 24847760
30. Xiaoshuo Wang, Yuan Zhang, **Yanghua He**, Peipei Ma, Lijun Fan, Yachun Wang, Yi Zhang, Dongxiao Sun, Shengli Zhang, Chuduan Wang, Jiuzhou Song and Ying Yu. Aberrant promoter methylation of the CD4 gene in peripheral blood cells of mastitic dairy cows. *Genetics and molecular research*. 2013 Dec 4;12(4):6228-39. PubMed Central PMID: 24338418
31. **Yanghua He**, Ying Yu, Yuan Zhang, Jiuzhou Song, Apratim Mitra, Yi Zhang, Yachun Wang, Dongxiao Sun, Shengli Zhang. Genome-wide bovine H3K27me3 modifications and the regulatory effects on genes expressions in peripheral blood lymphocytes. *Plos One*. 2012;7(6): e39094. PubMed Central PMCID: PMC3386284
32. Jian Gao, Han-qi Zhang, Jian-zhong He, **Yanghua He**, Shu-mei Li, Rong-guang Hou, Qiao-xing Wu, Yang Gao, Bo Han. Characterization of Prototheca zopfii Associated with Outbreak of Bovine Clinical Mastitis in Herd of Beijing, China. *Mycopathologia.* 2012 Apr;173(4):275-81. PubMed Central PMID: 22160589
33. **Yanghua He**, Qin Chu, Peipei Ma, Yachun Wang, Qin Zhang, Dongxiao Sun, Yi Zhang, Ying Yu, Yuan Zhang. Association of bovine *CD4* and *STAT5b* single nucleotide polymorphisms with somatic cell scores and milk production traits in Chinese Holsteins. *Journal of Dairy Research.* 2011 May;78(2):242-9. PubMed Central PMID: 21435309
34. **Yanghua He**, Ying Yu, Yuan Zhang. Relationships between copy number variations and human disease and its perspective in animal disease-resistant breeding. [Article in Chinese] *HEREDITAS (Beijing)*. 2008 Nov;30(11):1385-91. PubMed Central PMID: 19073544

Extension Publications

1. Jinzeng Yang, Michael DuPonte, Douglas Vincent, Kyle Caires, **Yanghua He**, Nicole Correa, Lehua Wall, Keala Cowell, Marla Fergerstrom. DNA-Based Bull Selection and Artificial Insemination for Grass-Fed Beef Cattle Production. 2020 June. http://www.ctahr.hawaii.edu/oc/freepubs/pdf/AAS-1.pdf

Conference Proceedings

1. **Yanghua He*,** Ning Yang, and Jiuzhou Song. The current and future of epigenetics in poultry health. Proceeding paper. THE XXV WORLD'S POULTRY CONGRESS. Beijing, China. 2016.
2. **Yanghua He*** and Jiuzhou Song. The Current and Future of Epigenetics of Marek's Disease in Chickens. The 62nd Annual National Breeders Roundtable. Breeders Roundtable, 2013 Pages 19-25

Manuscripts Under Review/Development

1. **Yanghua He**[*], Qian Qi, Byoung Ryu, Chunliang Li, Yong Cheng. A novel epigenome editor. Writing the manuscript for *Nature Methods*.
2. **Yanghua He**[*], Hao Bai, Jose Adrian Carrillo, Yaokun Li, Guirong Sun, Jiuzhou Song. DNA methylation footprints in chicken Marek's disease. Preparing.
3. Mandeep Adhikari, Ryan Longman, Thomas Giambelluca, C. N. Lee, **Yanghua He**. The analysis of climate parameters for pasture-based dairy farms in Hawai'i. Being reviewed by *Journal of Animal Science*, 2021

Book Chapters

1. **Yanghua He**[*] and Jiuzhou Song. 2016. Book Chapter 15 Bioinformatics analysis of Epigenetics. In: Bioinformatics in Aquaculture (edited by John Liu), Blackwell Publishing, Ames, IA. ISBN10: 1118782356. ISBN13: 9781118782354. Publication date: 03 February 2017. Publication City/Country New York, United States. https://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118782392.ch15

Patents

1. **Yanghua He**, Yuan Zhang, Ying Yu. The molecular method of detecting dairy cattle with different milking performance, China Agricultural University, Application No. 201010242552.5. July 2010.

Refereed Conference Abstracts (*Presenter)

1. Mandeep Adhikari, Ryan J. Longman, T.W. Giambelluca, C. N. Lee, Kyle Caires, **Yanghua He**[*]. Environmental Genome-Wide Association Reveals Climate Adaptation of Beef Cattle in Hawai'i. International Plant & Animal Genome Conference XXIX. San Diego, CA, USA. January 8 - 12, 2022
2. Huong Thanh Vu[*], **Yanghua He**, Jinzeng Yang. DNA Methylation Dynamics in Fetal-Neonatal Skeletal Muscle Influenced by Myostatin Inhibition. ANNUAL BIOMEDICAL SCIENCES SYMPOSIUM. John A. Burns School of Medicine, University of Hawaii Cancer Center. APRIL 15 – 16, 2021
3. Mandeep Adhikari[*], C.N. Lee, **Yanghua He**. Diverse Climatic Condition of Beef Cattle Production in Hawaii. 2020 SACNAS Virtual Conference. The National Diversity in Stem. October 19-24, 2020.
4. **Yanghua He**[*], Huong Thanh Vu, Yongjie Xu, Haixia Xu, Jinzeng Yang. Epigenetic mechanisms of myogenesis in myostatin transgenic mice. International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 11 - 15, 2020
5. **Yanghua He**[*], Qian Qi, Yong Cheng. Functional Epigenetics in Erythropoiesis. Genome San Diego 2018. San Diego, CA, USA. November 26-28, 2018
6. **Yanghua He**[*] and Jiuzhou Song. Epigenetic studies in Chicken Marek's Disease. 31st Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 25, 2017
7. **Yanghua He**[*], Qisheng Zuo, Bichun Li and Jiuzhou Song. Epigenetic regulation in chicken germ stem cell differentiation. Epigenetic workshop. International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 14-18, 2017.
8. Hao Bai, **Yanghua He**[*], Yi Ding, Huanmin Zhang, Jiuzhou Song. Allele-Specific Expression (ASE) of CD4+ T Cells in response to Marek's Disease Virus Infection. Poultry workshop.

International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 14-18, 2017.

9. **Yanghua He**[*] and Jiuzhou Song. Epigenetic regulation in chicken germ stem cell differentiation. 30th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. June 3, 2016
10. Yi Ding[*], **Yanghua He**, Jose Carrillo, Huanming Zhang, Jiuzhou Song. Transcriptomic signatures of Marek's disease in immune organs. Poultry Science Association Annual Meeting. Louisville, Kentucky, United States. July 27-30, 2015
11. Bo Han[*], **Yanghua He**, Yi Ding, Li Zhang, Ning Yang, Jiuzhou Song. Identification of LincRNAs and their modeling of knockdown systems associated with chicken Marek's disease. Poultry Science Association Annual Meeting. Louisville, Kentucky, United States. July 27-30, 2015
12. **Yanghua He**[*], Huanmin Zhang, Robert L. Taylor, Jr., and Jiuzhou Song. DNA methylation patterns associated with the resistance of Marek's disease. Poultry Science Association Annual Meeting. Louisville, Kentucky, United States. July 27-30, 2015
13. **Yanghua He**[*], Bichun Li, Jose Carrillo, Yaokun Li, Jiuzhou Song. The DNA methylation landscape and regulatory elements in chicken germ stem cells differentiation. 29th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 28. 2015
14. **Yanghua He**[*], Huanmin Zhang and Jiuzhou Song. Differential transcriptome analysis of CD4+ T cells of chickens induced by Marek's disease virus challenge. International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 10-14, 2015
15. Huanmin Zhang[*], Qingmei Xie, Shuang Chang, **Yanghua He**, Catherine W. Ernst, Jiuzhou Song. Vaccine Induced Differential Expressions of miRNAs at Cytolytic Stage in Chickens Resistant or Susceptible to Marek's Disease. International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 10-14, 2015
16. **Yanghua He**[*], Minyan Song, Ying Yu. The regulatory effects of H3K27me3 on bovine mastitis susceptibility and resistance to *Staphylococcus aureus*. 34th International Society for Animal Genetics Conference. Xi'an, China. July 28-August 1, 2014.
17. **Yanghua He**[*], Yi Ding, Huanmin Zhang, Hans Cheng, Keji Zhao and Jiuzhou Song. LincRNA identification of Marek's disease in CD4+ T cells. 10th International Symposium on Marek's Disease and Avian Herpesviruses. East Lansing, MI. United States. July 20-23, 2014.
18. Huanmin Zhang[*], Qingmei Xie, Shuang Chang, **Yanghua He**, Catherine W. Ernst, Mohammad Heidari, Alexis Black-Pykosz, Jiuzhou Song. Differential Expression Profiling of miRNAs between Marek's Disease Resistant and Susceptible Chickens. 10th International Symposium on Marek's Disease and Avian Herpesviruses. East Lansing, MI. United States. July 20-23, 2014.
19. **Yanghua He**[*], Jose Carrillo, Juan Luo and Jiuzhou Song. Genome-wide mapping of DNase I hypersensitive sites and association analysis with gene expression in MSB1 cells. 28th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 29. 2014
20. Lingyang Xu[*], Juan Luo, **Yanghua He**, George Liu, Huanmin Zhang, Hans H Cheng, Jiuzhou Song. Genome-wide assessment genetic character of inbreed lines indicates selection of resistance to Marek's disease. 28th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 29. 2014
21. **Yanghua He**[*], Jiuzhou Song. The Current and Future of Epigenetics of Marek's Disease in Chickens. Proceedings of the 62nd Annual National Breeders Roundtable. St. Louis, Missouri. United States. May 2-3, 2013. Sponsored by: Poultry Breeders of America and U.S. Poultry & Egg Association.
22. **Yanghua He**[*], Ying Yu, and Yuan Zhang. H3K27me3 regulation in lymphocytes and the

association with bovine subclinical mastitis. ISAG 33rd Conference, Cairns, Australia. 2012 July

23. **Yanghua He**[*], Ying Yu, Yuan Zhang. Genome-wide Modifications of Bovine H3K27me3 and Their Effects on Genes Expression in Peripheral Blood Lymphocytes. The 7th Annual Conference of Asian Epigenome Alliance Genome Medicine Workshop on Epigenetic(-omic)s in Diseases. April 19-22, 2012. Shanghai China
24. **Yanghua He**[*], Ying Yu, Yuan Zhang, Yi Zhang, Yachun Wang, Dongxiao Sun, Shengli Zhang. To reveal genes related to *S. aureus* mastitis of bovine based on genome-wide expression profile. 16th national academic conference of animal science and technology. May 12-17, 2011. YangZhou, Jiangsu province. China.
25. **Yanghua He**[*], Qin Chu, Ying Yu and Yuan Zhang. Association of bovine *STAT5b* single nucleotide polymorphisms with somatic cell scores and milk production traits in Chinese Holsteins. 7th national academic conference of cattle science association of China Animal and Veterinary Society. October 15-18, 2009. Nanjing, Jiangsu province, China.
26. **Yanghua He**[*], Qin Chu, Ying Yu and Yuan Zhang. Association of bovine *CD4* single nucleotide polymorphisms with somatic cell scores and milk production traits in Chinese Holsteins. 15th national academic conference of animal science and technology. October 10-13, 2009. Yangling, Shaanxi province, China.

Conference Presentations and Posters (*Presenter)

1. Mandeep Adhikari, Ryan J. Longman, T.W. Giambelluca, C. N. Lee, Kyle Caires, **Yanghua He**[*]. Environmental Genome-Wide Association Reveals Climate Adaptation of Beef Cattle in Hawai'i. International Plant & Animal Genome Conference XXIX. San Diego, CA, USA. January 8 - 12, 2022
2. **Yanghua He**[*], *et. al.,* Epigenetic studies in Chicken Marek's Disease. 31st Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 25, 2017
3. **Yanghua He**[*], *et. al.,* Differential expression profiles of miRNAs induced by vaccination followed by Marek's disease virus challenge at cytolytic stage in chickens resistant or susceptible to Marek's disease. In Proceedings of: International Conference of Plant and Animal Genome. San Diego, California. January 8-13, 2016
4. **Yanghua He**[*], *et. al.,* The conservation and signatures of lincRNAs in Marek's disease of chicken. In Proceedings of: International Conference of Plant and Animal Genome. San Diego, California. January 8-13, 2016
5. **Yanghua He**[*], *et. al.,* Genome-wide assessment of inbred chicken lines indicates genomic segment in Marek's Disease resistance. 35th Conference for the International Society of Animal Genetics. Salt Lake City, UT. 2016
6. **Yanghua He**[*], *et. al.,* Epigenetic regulation in chicken germ stem cell differentiation. 30th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. June 3, 2016
7. **Yanghua He**[*], *et. al.,* DNA methylation patterns associated with the resistance of Marek's disease. Poultry Science Association Annual Meeting. Louisville, Kentucky, United States. July 27-30, 2015
8. **Yanghua He**[*], *et. al.,* The DNA methylation landscape and regulatory elements in chicken germ stem cells differentiation. 29th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 28. 2015
9. **Yanghua He**[*], *et. al.,* LincRNA identification of Marek's disease in CD4+ T cells. 10th International Symposium on Marek's Disease and Avian Herpesviruses. East Lansing, MI. United States. July 20-23, 2014.
10. **Yanghua He**[*], *et. al.,* Genome-wide mapping of DNase I hypersensitive sites and association

analysis with gene expression in MSB1 cells. 28th Annual Symposium of Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States. May 29. 2014

11. **Yanghua He**[*], *et. al.,* The study of genetic mechanisms in bovine mastitis. 16th national academic conference of animal science and technology. May 12-17, 2011. YangZhou, Jiangsu province. China.
12. **Yanghua He**[*], *et. al.,* Differential transcriptome analysis of CD4+ T cells of chickens induced by Marek's disease virus challenge. International Plant & Animal Genome Conference XXIII. San Diego, CA, USA. January 10-14, 2015
13. **Yanghua He**[*], *et. al.,* Genome-wide Modifications of Bovine H3K27me3 and Their Effects on Genes Expression in Peripheral Blood Lymphocytes. The 7th Annual Conference of Asian Epigenome Alliance Genome Medicine Workshop on Epigenetics(-omics) in Diseases. April 19-22, 2012. Shanghai China.
14. **Yanghua He**[*], *et. al.,* The Polymorphisms in Bovine *CD4* and *STAT5b* are Associated with SCS and Milk Production Traits in Chinese Holsteins. 15th national academic conference of animal science and technology. October 10-13, 2009. Yangling, Shaanxi province, China.

Invited Presentations

2018 **Yanghua He,** Invited Conference Presentation for the Epigenetics Workshop. The title of the talk: Functional Epigenetics in Erythropoiesis. Genome San Diego 2018. San Diego, CA, USA.

Media Appearances

2020 **Yanghua He** *et. al.,* **UNIVERSITY of HAWAI'I NEWS,** Outstanding article on *Nature Biotechnology* as a co-author "Genome editing for children's diseases could boost agricultural production" with the link: https://www.hawaii.edu/news/2020/06/26/change-seq-target-gene-editing/

2018 Jiuzhou Song, **Yanghua He**, *et. al.,* **MARYLAND FARM & HARVEST TV**. "The study of genetic variations in Angus populations shows their diversity in performance". Interviewed regarding genetic studies in Angus beef cattle. The link: https://video.mpt.tv/video/episode-605-tuerqo/ and the segment begins at 18:10 and ends at 19:10. December 11, 2018

2018 **Yanghua He** *et. al.,* **CISION PRWeb News**, "UMD Researcher Discovers Mechanisms and Epigenetic Markers with Implications for Diseases Ranging from Cancers to Infertility" with the link: http://www.prweb.com/releases/2018/05/prweb15452301.htm

Funded Grants

Date	Title	Role	Agency	Amount ($)
10/2021-06/2022	CTAHR internal funds	PI	UH CTAHR	$16,605
08/2019-08/2021	Start-up funds	PI	UH CTAHR	$100,000
08/2019-08/2022	Start-up funds	PI	UH OVCR	$50,000
03/2020-09/2020	Beef team science project	PI	UH CTAHR	$8,000

07/2020	NanoString Research Grant	PI	NanoString Technologies, Inc.	$3,000

Unfunded Grants

Title: Epigenetic studies of prenatal skeletal muscle development and its effects on metabolic diseases
Role: PI
Agency: 2021 Ola HAWAII Team-Science Pilot Projects Program
Submission Date: February 19, 2021
Funding year(s): 08/01/2021-07/31/2022
Amount: $50,000

Title: Epigenome-memory of skeletal muscle in gestation and its influences on postnatal muscle health
Role: PI
Agency: Hawai'i Community Foundation
Submission Date: March 8, 2021
Funding year(s): 08/01/2021-01/31/2023
Amount: $60,000

Title: EDGE CMT: Transgenerational inheritance and host defense in pathogen infection
Role: co-PI
Agency: National Science Foundation (NSF) Enabling Discovery through GEnomics (EDGE)
Submission Date: March 3, 2021
Funding year(s): 01/01/2022-12/31/2025
Amount: $650,000 (my share $80,000)

Title: Environmental Genome-Wide Association Reveals Climate Adaptation of Beef Cattle in Hawai'i
Role: PI
Agency: USDA NIFA Seed Grant, the Animal Breeding and Functional Annotation of Genomes program (A1201)
Submission Date: May 4, 2021
Funding year(s): 09/30/2021-09/29/2023
Amount: $300,000

TEACHING

Courses Taught

University of Hawai'i at Manoa

Course Number	Course Title	Credits	Term Offered
ANSC 200	Humans, Animals & Agriculture	3 credits	Fall semester
ANSC 201	Principal & Practice of Animal Science II	3 credits	Spring semester
ANSC 387	Lab Skills in Animal Science	2 credits	Fall semester

ANSC 445	Genetics and Animal Breeding	3 credits	Spring semester
ANSC/FSHN/MBBE499	Directed Research		
ANSC/FSHN/MBBE 650	DNA and Genetic Analysis	2 credits	Fall semester
ANSC/FSHN/MBBE699	Directed Research		

Invited Lectures

2021 **Yanghua He**, Invited lecture and discussion on "Nutrigenomics" for course ANSC 642: Advanced Animal Nutrition. Instructor: Dr. Rajesh Jha, University of Hawaii at Manoa, HI, USA

2019 **Yanghua He**, Invited lecture and discussion on "Careers in Animal Genetics" for course ANSC 200 class (Humans, Animals and Agriculture). Instructor: Danita Dahl, University of Hawaii at Manoa, HI, USA

2019 **Yanghua He**, Invited lecture and discussion on "Epigenetics and Obesity" for course FSHN 488 class (Obesity: Science and Issues). Instructor: Carolyn Donohoe-Mather, MAS, RDN, IBCLC, University of Hawaii at Manoa, HI, USA

2019 **Yanghua He**, Invited lecture and discussion on "Nutritional Epigenetics" for course ANSC/FSHN 601 class (Introduction to Food Systems). Instructor: Danita Dahl, University of Hawaii at Manoa, HI, USA

2019 **Yanghua He**, Invited lecture and discussion on "Epigenetic Therapeutics: A New Weapon in Metabolic Diseases" for course ANSC641/FSHN681 class (HNFAS graduate seminar). Instructor: Halina Zaleski, Ph.D., University of Hawaii at Manoa, HI, USA

2019 **Yanghua He**, Invited lecture and discussion on "Epigenetics and Nutritional Diseases" for course FSHN 685 class (Nutrition and Disease: Cellular and Molecular Aspects). Instructor: C. Alan Titchenal, PhD, CNS, University of Hawaii at Manoa, HI, USA

2017 **Yanghua He**, as a teaching assistant to teach the part 2 of Module 1: Chromatin, Epigenetics, and noncoding RNA; Graduate school, St. Jude Children's Research Hospital

2016 **Yanghua He**, Invited lecture on *Epigenetic Data Analysis* for graduate students in the class of *BIOM688 Statistic Genomics*. Instructor: Prof. Jiuzhou Song, University of Maryland, College Park, MD, USA

2015 **Yanghua He**, Teaching assistant for undergraduate course, one chapter of *ANSC435 Experimental embryology* with Prof. Carol L. Keefer, University of Maryland, USA

2009 **Yanghua He**, Teaching assistant for undergraduate course, *Animal Genetics and breeding* with Prof. Yuan Zhang, China Agricultural University, China

2008 **Yanghua He**, Teaching assistant for undergraduate course, *Biostatistics* with Prof. Yachun Wang, China Agricultural University, China

Advanced Courses attended

2017 *'Mixed Model Methods for Genomic Selection'* lectured by Prof. Yang Da from the University of Minnesota. Organized by the University of Maryland, USA.

2015 *'Bayesian GLMs for genetic association studies and a series of lectures'* lectured by Prof. Nengjun Yi from the University of Alabama at Birmingham. Organized by the University of Maryland, USA.

2011 *'Implement of Genomic selection and Genomic data analysis'* lectured by Prof. Henner Simianer from Georg-August-University Goettingen. Organized by China Agricultural University, Beijing, China.

Current Student Advisement

Student	*Year*	*Level, Program*	*Role*	*Status*
Mandeep Adhikari	2020 - present	PhD student, MBBE	Advisor	In progress
Huong Thanh Vu	2019 - present	Master student, MBBE	Advisor	In progress
Brock Wetzlich	2021 Fall	Undergraduate for the internship, ANSC	Advisor	In progress
Irene Liang	2019 - present	Undergraduate for the internship, ANSC	Advisor	In progress
Emily Conklin	2020 - present	PhD student, Biology	Committee	Preliminary committee
Donna Lee (Sweetie) Kuehu	2019 - present	PhD student, MBBE	Committee	Preliminary committee

PROFESSIONAL SERVICE

Service to the Profession

2020 – present Guest Editor for a Special Issue "Climate Change and Animal Genetics and Breeding" for the Journal *Animals* (ISSN 2076-2615)
2020 – present Guest Editor for a Research Topic "Bridging (Epi-) Genomics and Environmental Changes: the Livestock Research" on the Journal *Frontiers in Genetics*
2020 – present Editorial Board for *Journal of Genome Research and Genetic Therapies*
2019 – present Editorial Board for *Annals of Carcinogenesis*
2019 – present Editorial Board for *Neurophysiology and Rehabilitation journal*
2018 – present Editorial Board for *Current Genomics* (IF 2.342)
2017 – present Editorial Board for *The Scientific Pages of Bioinformatics*
2017 – present Editorial Board for *Journal of Bacteriology and Vaccine Research*
2017 – present Editorial Board for *Virology & Retrovirology Journal*
2016 – present Editorial Board for *SM Journal of Family Medicine*
2016 – present Editorial Board for *Austin Immunology*
2016 – present Editorial/reviewer Board for *Scientific Pages of Immunology*
2016 – present Editorial Board for *Insights in Genetics and Genomics*
2016 – present Editorial Board for *The Scientific Pages of Health Care*
2016 – present Editorial/Reviewer Board for *Scientific Pages of Agricultural Technologies*
2020 – present Reviewer for *Functional & Integrative Genomics (IF 3.19)*
2019 – present Reviewer for *Frontier in Genetics (IF 3.789)*
2019 – present Reviewer for *Microbial Pathogenesis (IF 2.581)*
2019 – present Reviewer for *Veterinary Research (IF 1.792)*
2018 – present Reviewer for *Poultry Science (IF 2.216)*
2017 – present Reviewer for *Oncotarget (IF 5.008)*
2017 – present Reviewer for *Scientific Reports (IF 4.259)*
2017 – present Reviewer for *Gene (IF 2.319)*
2017 – present Reviewer for *BMC Genetics (IF 2.266)*

2017 – present Reviewer for *Research in Veterinary Science (IF 1.46)*
2016 – present Reviewer for *Electronic Journal of Biotechnology (IF 2.894)*
2016 – present Reviewer for *PeerJ (IF 2.183)*
2018 – present Member of The Epigenetics Society
2017 – present Member of *AAAS/Science Program*
2019 – present Member of *AMERICAN GRASSFED ASSOCIATION*
2020, Summer **Grant Reviewer** for The Agence Nationale De La Recherche (ANR) 2020 generic call of the National Research Agency, France
2021, Summer **Grant Reviewer** for The Agence Nationale De La Recherche (ANR) 2021 generic call of the National Research Agency, France

Service to the University

University of Hawai'i at Manoa

Year	***Role***	***Agency***
07/2020 – 07/2021	FACULTY SENATE	College of Tropical Agriculture and Human Resources
08/2019 - present	Research Committee panel	Department of Human Nutrition, Food and Animal Sciences