
CONTACT INFORMATION	3695 Litton Reaves Hall 175 West Campus Drive Virginia Tech Blacksburg, Virginia 24061 USA	<i>E-mail:</i> haipengyu@vt.edu <i>Phone:</i> (701) 730-1368 <i>WWW:</i> haipengu.github.io
RESEARCH INTERESTS	My overarching research interest is to leverage statistics, machine learning, and bioinformatics to better understand the genotype-phenotype map in animal and plant genetics. Particularly, I am interested in developing and applying statistical methods to the whole-genome prediction of complex traits, genome-wide association analysis, high-throughput phenotyping analysis, and image analysis.	
EDUCATION	Virginia Polytechnic Institute and State University , Blacksburg, Virginia USA Ph.D., Animal and Poultry Sciences - Quantitative Genetics, Expected in Summer 2020 <ul style="list-style-type: none">• Advisor: Dr. Gota Morota North Dakota State University , Fargo, North Dakota USA M.S., Animal Breeding and Genetics, August 2016 <ul style="list-style-type: none">• Thesis: “The exploration of a four-platform standing scale in the application of measuring temperament in beef cattle”• Advisor: Dr. Lauren Hulsman Hanna Qingdao Agricultural University , Qingdao, Shandong CHINA B.S., Veterinary Medicine, July 2013	
WORK EXPERIENCE	Department of Animal and Poultry Sciences Virginia Polytechnic Institute and State University , Blacksburg, Virginia USA <ul style="list-style-type: none">• Graduate Research Assistant 08/2018 - Present• Graduate Teaching Assistant Spring 2019 Department of Animal Science University of Nebraska-Lincoln , Lincoln, Nebraska USA <ul style="list-style-type: none">• Graduate Research Assistant 08/2016 - 08/2018 Department of Animal Sciences North Dakota State University , Fargo, North Dakota USA <ul style="list-style-type: none">• Graduate Teaching Assistant 08/2015 - 05/2016• Graduate Research Assistant 01/2015 - 05/2016	
PROFESSIONAL SOCIETY MEMBERSHIPS	<ul style="list-style-type: none">• The American Society of Animal Science. 2017 - Present	

PREPRINTS

7. **Yu H**, Morota G, Celestino EF, Dahlen CR, Wagner SA, Riley DG, and Hanna LLH. Deciphering cattle temperament measures derived from a four-platform standing scale using genetic factor analytic modeling. *bioRxiv*. doi: [10.1101/2020.01.20.913343](https://doi.org/10.1101/2020.01.20.913343)
6. Campbell M, **Yu H**, Momen M, and Morota G. Examining the relationships between phenotypic plasticity and local environments with genomic structural equation models. *bioRxiv*. doi: [10.1101/2019.12.11.873257](https://doi.org/10.1101/2019.12.11.873257)
5. **Yu H** and Morota G. GCA: An R package for genetic connectedness analysis using pedigree and genomic data. *bioRxiv*. doi: [10.1101/696419](https://doi.org/10.1101/696419)

PEER REVIEWED JOURNAL PAPERS

3 first author and 1 co-author

- 2019
 4. Hanna LLH, Hieber JK, **Yu H**, Celestino Jr EF, Dahlen CR, Wagner SA, and Riley DG. 2019. Blood collection has negligible impact on scoring temperament in Angus-based weaned calves. *Livestock Science*. **230**:103835. doi: [10.1016/j.livsci.2019.103835](https://doi.org/10.1016/j.livsci.2019.103835)
 3. **Yu H**, Campbell MT, Zhang Q, Walia H, and Morota G. 2019. Genomic Bayesian confirmatory factor analysis and Bayesian network to characterize a wide spectrum of rice phenotypes. *G3: Genes, Genomes, Genetics*. **9**:1975-1986. doi: [10.1534/g3.119.400154](https://doi.org/10.1534/g3.119.400154)
- 2018
 2. **Yu H**, Spangler ML, Lewis RM, and Morota G. 2018. Do stronger measures of genomic connectedness enhance prediction accuracies across management units? *Journal of Animal Science*. **96**:4490-4500. doi: [10.1093/jas/sky316](https://doi.org/10.1093/jas/sky316)
- 2017
 1. **Yu H**, Spangler ML, Lewis RM, and Morota G. 2017. Genomic relatedness strengthens genetic connectedness across management units. *G3: Genes, Genomes, Genetics*. **10**:3543-3556. doi: [10.1534/g3.117.300151](https://doi.org/10.1534/g3.117.300151).

PAPERS IN PROCEEDINGS

1 first author

- 2018
 1. **Yu H**, Spangler ML, Lewis RM, and Morota G. 2018. Stronger measures of genomic connectedness enhance prediction accuracies across management units. In: *Proceedings, 11th World Congress of Genetics Applied to Livestock Production*. **11**:406. February 11-16, Auckland, New Zealand. [\[PDF\]](#)

CONTRIBUTED PRESENTATIONS

- 2019
 4. Precision agriculture on cattle temperament: Utilizing factor analysis and multi-trait modeling to characterize a four-platform standing scale. NCERA-225 Annual Meeting. Implementation and Strategies for National Beef Cattle Genetic Evaluation. Blacksburg, VA. October 10-11.

- 2018 3. An assessment of genomic relatedness across management units. ADSA-ASAS 2018 Midwest Meeting. Omaha, NE. March 12-14. [\[Abstract\]](#)
- 2017 2. Stronger measures of genomic connectedness enhance prediction accuracies across management units. NCERA-225 Annual Meeting. Implementation and Strategies for National Beef Cattle Genetic Evaluation. Stanley Stout Livestock Marketing Center, Manhattan, KS. October 18-19.
1. Genomic relatedness strengthens genetic connectedness across management units. ASAS-CSAS Annual Meeting and Trade Show. Baltimore, MD. July 8-12.

INTRAMURAL SEMINARS

- 2019 • Genetic connectedness across management units. Ninth Annual Animal and Poultry Sciences Research Symposium. Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University. May 21.
- Genetic connectedness across management units. The Reproductive Biology Club. Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University. April 19.
- 2018 • Genomic factor analytic and graphical models to characterize a wide spectrum of rice phenotypes. Animal Breeding and Genetics seminar. Department of Animal Science, University of Nebraska-Lincoln. February 28.
- 2017 • Genomic relatedness strengthens genetic connectedness across management units. Animal Breeding and Genetics seminar. Department of Animal Science, University of Nebraska-Lincoln. February 14.
- The exploration of a four-platform standing scale in the application of measuring temperament in beef cattle. Animal Breeding and Genetics Seminars. Department of Animal Sciences, University of Nebraska-Lincoln. September 29
- 2016 • M.S., Thesis Defense. Department of Animal Sciences, North Dakota State University. May 17.

TEACHING

Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA

Guest Instructor

- GWAS Workshop [\[Slide\]](#) **Summer 2019**

Graduate Teaching Assistant

- ALS 3104: Animal Breeding and Genetics **Spring 2019**

University of Nebraska-Lincoln, Lincoln, Nebraska, USA

Guest Instructor

- ASCI 944 / STAT 844 Quantitative Methods for Genomics of Complex Traits **Spring, 2018**
[\[Slide\]](#) [\[R\]](#)

North Dakota State University, Fargo, North Dakota USA

Graduate Teaching Assistant

- ANSC 357: Animal Genetics
- AGRI 189: Skills for Academic Success

Spring 2016
Fall 2015

OSS CONTRIBUTIONS

- R package
- GCA - <https://github.com/HaipengU/GCA>

PARTICIPATION IN MEETINGS, SYMPOSIUMS, AND WORKSHOPS

- 2015
- NCERA-225 Annual Meeting. Implementation and Strategies for National Beef Cattle Genetic Evaluation. North Dakota State University, ND, October 22-23.
 - Graduate Learning Conference for College Teaching. North Dakota State University, ND. August 17-18.
 - WERA-1: Beef Cattle Breeding in the Western Region. Miles City, MT. May 19-20.
 - Midwest Meeting of American Society of Animal Science. Des Moines, IA. March 15-18.

HONORS/ AWARDS

- 2019
- 24th Summer Institute in Statistical Genetics (SISG) Scholarship, University of Washington, July.
 - Ninth Annual Animal and Poultry Sciences Research Symposium Travel Award \$400, Virginia Polytechnic Institute and State University, May.
- 2015
- Frank Bain Graduate Student Scholarship \$1,650, North Dakota State University, Spring.
- 2009-2013
- Outstanding Undergraduate Scholarship, Qingdao Agricultural University, China.

ADDITIONAL TRAINING

- 2019
- Deep Learning for Computer Vision Workshop, Virginia Tech, VA, September 6.
 - 24th Summer Institute in Statistical Genetics (SISG), University of Washington, Seattle, WA, July 17-24.
- 2018
- Programming and Computer Algorithms in Animal Breeding With Focus on Genomic Selection and Single-Step GBLUP, University of Georgia, GA, May 7-25.

2017

- Introduction to Graphical Models With Applications to Quantitative Genetics and Genomics, Iowa State University, IA, June 19-23.
- Software Carpentry Workshop. University of Nebraska-Lincoln, NE, January 5-6.

REFERENCES

References and additional information available upon request.