

**Anil Sigdel, M.S., Ph.D.**  
Postdoctoral Research Associate  
Department of Animal & Dairy Sciences  
University of Wisconsin-Madison

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Links: [Google Scholar](#) | [ResearchGate](#) | [GitHub](#)

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## EDUCATIONAL BACKGROUND

**Doctor of Philosophy • Animal Sciences.....transfer. Sep. 2020 – May 2022**

*Dept. of Animal & Dairy Sciences, University of Wisconsin-Madison*

Dissertation: Developing novel genomic tools for reducing fetal loss and stillbirth in dairy cattle

**Doctor of Philosophy • Animal Sciences.....Aug. 2018 – Aug. 2020**

*Dept. of Animal Sciences, University of Florida*

**Master of Science • Animal Sciences.....Jan. 2016 – May 2018**

*Dept. of Animal Sciences, University of Florida*

Thesis: Genetic analysis of heat tolerance for production, reproduction, and health traits in US Holstein cows

**Bachelor of Science • Veterinary Science & Animal Husbandry.....Aug. 2009 – Nov. 2014**

*Tribhuvan University, Kathmandu, Nepal*

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## PROFESSIONAL EXPERIENCE

**Research Associate .....March 2024 - present**

*Dept. of Animal & Dairy Sciences, University of Wisconsin-Madison*

- Advisor Dr. Guilherme Rosa
- Projects with primary responsibility:
  - Integrating genomics, enviromics & machine learning for precision breeding of resilient beef cattle

**Fellowship in Canine Genomics.....June 2022 – Feb. 2024**

*School of Veterinary Medicine, University of Pennsylvania*

- Advisor Dr. Gustavo Aguirre

- Projects with primary responsibility:
  - Investigate the genetic basis of inherited eye-disorders including cataract and retinal diseases in dogs
  - Identify the genetic causes of inherited blindness including finding causal mutations to disease

**Graduate Research Assistant (Ph.D. candidate) .....Sep. 2020 – May 2022**

*Dept of Animal & Dairy Sciences, University of Wisconsin-Madison*

- Advisor Dr. Francisco Peñagaricano
- Project with primary responsibility:
  - Gene-mapping, gene-set analysis, and genomic prediction of pregnancy loss in US Holstein cattle

**Intern .....May 2021 – Aug. 2021**

*Council on Dairy Cattle Breeding, Bowie, Maryland*

- Advisors: Dr. Nick Wu & Dr. Kristen Parker Gaddis
- Project with primary responsibility
  - Genetic evaluations of stillbirth in five US dairy breeds – A historical data-oriented feasibility study

**Graduate Research Assistant (Ph.D. student) .....Aug. 2018 – Aug. 2020**

*Dept. of Animal Sciences, University of Florida*

- Advisor Dr. Francisco Peñagaricano
- Project mentoring international visiting scholars in the lab
  - Genetic effects of heat stress on milk fatty acids in Brazilian Holstein cattle
  - Direct, indirect, and pleiotropic genetic effects associated with calving ease, retained placenta, and metritis in US Holstein cows.

**Graduate Research Assistant (M.S. student) .....Jan. 2016 – May 2018**

Dept. of Animal Sciences, University of Florida

- Advisor: Dr. Francisco Peñagaricano
- Project with primary responsibility
  - Genetic evaluation of milk production and reproduction traits under heat stress conditions in US Holstein cows
  - Genetic evaluation of post-partum health traits in US Holstein cattle

## **TEACHING EXPERIENCE**

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### **University of Wisconsin-Madison & University of Florida**

Fall, 2025	Teaching assistant	ANSCI 610: Quantitative Genetics
Spring, 2021	Teaching assistant	ANSCI 361: Introduction to Animal & Veterinary Genetics
Spring, 2021	Teaching assistant	ANSCI 363: Principles of Animal Breeding
Fall, 2018 & 2017	Teaching assistant	ANS 6905: Applied Statistics for Animal Sciences

### **Bruce Weir Summer Institute in Statistical Genetics, Georgia Tech**

Summer, 2024	Teaching assistant	QG1: Quantitative Genetics
Summer, 2024	Teaching assistant	QG2: Mixed Models in Quantitative Genetics

## **MENTORING EXPERIENCE**

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FALL 2019 – SPRING 2020

### **MENTOR to VISITING SCIENTIST from Brazil**

- Developed and customized pipelines for genetic data processing
- Built statistical models for genomic association studies and genomic prediction.

FALL 2018

### **MENTOR to UNDERGRADUATE STUDENT from University of Florida**

- Guided undergraduate student in high-dimensional genetic data analysis using computer clusters for senior year capstone project

FALL 2017

### **MENTOR to UNDERGRADUATE VISITOR STUDENT from Brazil**

- Introduced visiting student to basic animal breeding and statistics concepts.
- Facilitated student through basic data analysis/statistical processes.
- Produced one refereed publication and one abstract.

## SCHOLARSHIP AND AWARDS

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- Department of Animal Sciences Teaching Award..... Nov. 2019**
- *Dept. of Animal Sciences, University of Florida*
- Department of Animal Sciences Top-up Award..... Oct. 2019**
- *Dept. of Animal Sciences, University of Florida*
- IFAS Dean's Office Top-Up Award..... Nov. 2019**
- *Dean's office, IFAS, University of Florida*
- Grinter Fellowship Award..... Sep. 2018**
- *Graduate school, University of Florida*
- William C. and Bertha M. Cornett Fellowship..... Aug. 2018**
- *College of Ag. & Life Sciences, University of Florida*
- University of Florida Animal Sciences Matching Fellowship..... Aug. 2018-Aug. 2020**
- *Awarded to a PhD student in the Animal Sciences program at the University of Florida to partially fund (50%) tuition and stipend.*
- University of Florida Animal Sciences Matching Fellowship..... Jan. 2016-May 2018**
- *Awarded to a MS student in the Animal Sciences program at the University of Florida to partially fund (50%) tuition and stipend.*

## **TRAVEL AWARDS**

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**Travel Grant to attend Association for Research in Vision and Ophthalmology (ARVO) annual meeting..... Apr. 2023**  
**New Orleans, Louisiana**

- *Penn Postdoc Association Presidential Travel Award, University of Pennsylvania \$500.00*

**Travel Grant to attend 11<sup>th</sup> World Congress on Genetics applied to Livestock Production..... Feb. 2018**  
**Auckland, New Zealand**

- *Institute of food & Agricultural Sciences, University of Florida \$350.00*
- *Graduate Student Council, University of Florida \$250.00*

## **PUBLICATIONS**

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Full List of Publications: [Google Scholar](#) (Statistics: Dec 27, 2025): citations: 405; h-index=10; i10-index = 10

## **PEER-REVIEWED JOURNAL ARTICLES**

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1. Weigel KA., Chasco A., Pacheco HA., **Sigdel, A.**, Guinan, FL., Lauber MR., Fricke PM., and Peñagaricano, F. (2024). Genomic selection in dairy cattle: impact and contribution to the improvement of bovine fertility. Clinical Theriogenology 2024, 16, 10399
2. **Sigdel, A.**, Bisinotto, R.S., and Peñagaricano, F. (2022). Genetic analysis of fetal loss in Holstein Cattle. Journal of Dairy Science 105, 9012-9020
3. **Sigdel, A.**, N. Wu, K. P. Gaddis, D. Norman, J. A. Carrillo, J. Burchard, F. Peñagaricano and J. Dürr (2022). Genetic evaluations of stillbirth for five United States dairy breeds: A data-resource feasibility study. Frontiers in Genetics 13
4. Dauria, B.D., **Sigdel, A.**, Petrini, J., Bóscollo, P.P., Pilonetto, F., Salvian, M., Rezende F.M., Pedrosa V.B., Bittar, C.M.M., Machado P.F., Coutinho L.L., Wiggans G.R. and G.B. Mourão (2022). Genetic effects of heat stress on milk fatty acids in a Brazilian Holstein cattle. Journal of Dairy Science 105, 3296-3305
5. Bhattacharai, N., Poudel, J., Kolakshyapati, M.R., Sharma, M.P., Gorkhali, N.A., **Sigdel, A.**, Upadhyaya, S., and Sapkota, S. (2022). Evaluation of reproductive performance and litter traits of Khari, Jamunapari and Sirohi crossbred goats in Surkhet district of Karnali province, Nepal. Journal of Agriculture and Forestry University 71-80

6. **Sigdel, A.**, Bisinotto, R.S., and Peñagaricano, F. (2021). Genes and pathways associated with pregnancy loss in dairy cattle. *Scientific Reports* 11, 13329
7. Pandey, A., Devkota, A., **Sigdel, A.**, Yadegari, Z., Dumenyo, K. and Taheri, A. (2021). Citric acid/β-alanine carbon dots as a novel tool for delivery of plasmid DNA into *E.coli* cells. *Scientific Reports* 11, 23964
8. **Sigdel, A.**, Liu, L., Abdollahi-Arpanahi, R., Aguilar, I., and Peñagaricano, F. (2020). Genetic dissection of reproductive performance of dairy cows under heat stress. *Animal Genetics* 51, 511-520
9. Sah, K., Karki, P., Shrestha, R.D., **Sigdel, A.**, Adesogan, A.T., and Dahl, G.E. (2020). MILK Symposium review: Improving control of mastitis in dairy animals in Nepal\*. *Journal of Dairy Science* 103, 9740-9747
10. **Sigdel, A.**, Abdollahi-Arpanahi, R., Aguilar, I., and Peñagaricano, F. (2019). Whole genome mapping reveals novel genes and pathways involved in milk production under heat stress in US Holstein cows. *Frontiers in Genetics* 10
11. Vatankhah, M., **Sigdel, A.**, and Abdollahi-Arpanahi, R. (2019). Population structure of Lori-Bakhtiari sheep in Iran by pedigree analysis. *Small Ruminant Research* 174, 148-155
12. Pacheco, H.A., Da Silva, S., **Sigdel, A.**, Mak, C.K., Galvão, K.N., Texeira, R.A., Dias, L.T., and Peñagaricano, F. (2018). Gene mapping and gene-set analysis for milk fever incidence in Holstein dairy cattle. *Frontiers in Genetics*, 9
13. **Sigdel, A.**, Bhattarai, N., Kolachhapati, M.R. and Paudyal S. (2015). Estimation of genetic parameters for productive traits of Murrah buffaloes in Kaski, Nepal. *International Journal of research*, 2(5)
14. **Sigdel, A.**, Bhattarai, N., and Kolachhapati, M.R. (2015). Impacts of climate change on milk production of Murrah buffaloes in Kaski, Nepal. *Proceedings of International Conference on Climate Change Innovation and Resilience for Sustainable livelihood*, 12-14 January 2015, Kathmandu, Nepal
15. **Sigdel A.**, Kolachhapati. M.R., and Bhattarai N. (2014). Effect of non-genetic factors on productive traits of Murrah buffaloes. *Nepalese Journal of Agricultural Sciences* 12: 148-152

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## MANUSCRIPTS IN PREPARATION

1. **Sigdel A.**, Heo S., Garcia A., Lourenco D., Rowan T., Brito LF., Gondro C., Huang J., de Souza SV., Retallick K. & Rosa GJM. Genotype-by-environment interaction for weaning weight in Angus cattle using reaction norm analysis

## **PROFESSIONAL SERVICE**

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1. Ad-hoc reviewer, Journal of Dairy Science (2024 – present)
2. Ad-hoc reviewer, BMC Genomics (2024 – present)
3. Ad-hoc reviewer, Frontiers in Microbiology (2023 – present)
4. Ad-hoc reviewer, Animals (2021 – present)
5. Ad-hoc reviewer, PeerJ (2021 – present)
6. Ad-hoc reviewer, Frontiers in Genetics (2021 – present)

## **PROFESSIONAL MEMBERSHIP**

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1. Member, American Society of Animal Science, 2024-present
2. Member, Association for Research in Vision and Ophthalmology, 2023-present
3. Member, American Dairy Science Association, 2016-present

## **PROFESSIONAL DEVELOPMENT CONFERENCES**

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1. 2025 Advances in Genome Biology and Technology -Agricultural Meeting, Orlando, FL
2. 2024 Midwest section American society of Animal Science, Annual Meeting Madison, WI
3. 2023 The Association for Research in Vision and Ophthalmology, Annual Meeting – New Orleans, LA
4. 2022 International Conference on Canine and Feline Genetics and Genomics – Huntsville, AL
5. 2021 ADSA Annual Meeting – Virtual Meeting
6. 2020 ADSA Annual Meeting – Virtual Meeting
7. 2019 ADSA Annual Meeting – Cincinnati, OH
8. 2018 ADSA Annual Meeting – Knoxville, TN
9. 2018 World Congress on Genetics Applied to Livestock Production – Auckland, New Zealand
10. 2017 ADSA Annual Meeting – Pittsburgh, PA