

**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](#)

## **EDUCATIONAL BACKGROUND**

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**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*

## **PROFESSIONAL EXPERIENCE**

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**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. Bhattarai, N., Poudel, J., Kolakshyapati, M.R., Sharma, M.P., Gorkhali, N.A., **Sigdel, A.**, Upadhayaya, 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/ $\beta$ -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

## MANUSCRIPTS IN PREPARATION

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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