

UNIVERSITY OF VERMONT
Curriculum Vitae

Date: July 24th, 2023

SURNAME: Costa

FIRST NAME: Joao

MIDDLE INITIALS: H. C.

ADDRESS: Department of Animal and Veterinary Sciences
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Burlington, VT 05405.

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COLLEGE: The College of Agriculture and Life Sciences (CALS)

DEPARTMENT: Animal and Veterinary Sciences

PRESENT RANK: Associate Professor (Since: 05/2023)

Career Objectives:

To create a research and extension program focused on dairy systems — with emphasis on precision dairy farming, dairy cattle management, and applied animal behavior — based on nutrition, animal welfare, health and welfare, and sustainability concerns; I aim to create an inspirational learning environment that motivates graduate and undergraduate students to learn about farm animals.

1. PROFESSIONAL EXPERIENCE

1.1. POST-SECONDARY EDUCATION

- 2015 Ph.D. Animal Science
Focus: Dairy Science, Animal Behavior and Welfare
University of British Columbia (UBC), Vancouver, BC, Canada
Supervisor: Dr. Daniel M. Weary
Thesis: *Food neophobia, feeding and sorting behavior in dairy calves.*
<https://doi.org/10.14288/1.0165824>
- 2012 M.S. Agroecosystems
Focus: Dairy Science, Ethology and Animal Welfare
Federal University of Santa Catarina (UFSC), Florianopolis, SC, Brazil
Supervisor: Dr. Maria J. Hötzel
Thesis: *A survey of management practices that influence production and welfare of dairy cattle on family farms in southern Brazil.*
<https://repositorio.ufsc.br/xmlui/handle/123456789/96187>
- 2009 B.Sc. Agronomy/ Agricultural Engineering
Federal University of Santa Catarina (UFSC), Florianopolis, SC, Brazil

1.2. TEACHING CERTIFICATIONS

- 2014 Instructional Skills Workshop
Professional development of teaching theory and practices
University of British Columbia

1.3. EMPLOYEMENT RECORD

1.3.1. EMPLOYEMENT RECORD PRIOR TO THE UNIVERSITY OF VERMONT

Table 1. Employment record prior to the University of Vermont

University or Institution	Position	Dates
The University of Kentucky	Assistant Professor	07/2017 – 03/2023
The University of British Columbia / Federal University of Santa Catarina	Post-doctoral fellow	12/2015 – 06/2017
Animal Welfare Program, The University of British Columbia	Graduate research assistant	01/2015 – 12/2015
Dairy Education and Research Centre, The University of British Columbia	Graduate student coordinator	01/2015 – 12/20

1.3.2. EMPLOYEMENT RECORD AT THE UNIVERSITY OF VERMONT

**Table 2. Distribution of Effort at the University of Vermont
(Associate Professor, 03/2023 – Present)**

Year	Research	Instruction	Service	Total
2023 (Summer)	100%	0%	0%	100%
2023-2024 (Academic Year)	47%	43%	10%	100%
Average	60.25%	32.25%	7.5%	100%

1. Associate Professor (03/2023 – Present)

Department of Animal and Veterinary Sciences, University of Vermont.

Since my appointment in March, 2023, I have established The Costa's Research Dairy Science Program. This program, under my leadership at the University of Vermont, is a multidisciplinary and collaborative research program in the field of dairy science and precision livestock farming. Currently, the research program investigates dairy calf and heifer applied nutrition and feeding behavior, animal welfare metrics, measurement of animal welfare level on-farm, health and management decision support tools based on dairy precision tools, precision nutrition algorithms, management tool development, and basic animal behavior science. In leading my research program. I employ a variety of research models across several scientific fields, including ruminant nutrition, in vivo studies, behavioral observations, precision technology, and developmental biology. At this point I have under my supervision 2 MSc students and 2 Post-Doctoral fellows.

1.3.2. EMPLOYEMENT RECORD AT THE UNIVERSITY OF KENTUCKY

**Table 3. Distribution of Effort at the University of Kentucky
(Assistant Professor, 2017-2023)**

Year	Research	Instruction	Service	Total
2017-2018	70%	25%	5%	100%
2018-2019	59%	36%	5%	100%
2019-2020	62%	33%	5%	100%
2020-2021	68%	27%	5%	100%
2021-2022	55%	40%	5%	100%
2022-2023	55%	40%	5%	100%
Average	62%	34%	5%	100%

2. Assistant Professor (06/2017 – Present)

Department of Animal and Food Sciences, University of Kentucky.

During my appointment between July 2017 and March 2023, as an Assistant Professor at the University of Kentucky, I led a world-recognized dairy science program. The Dairy Science program under my leadership at the University of Kentucky was a multidisciplinary and collaborative research program in the field of dairy science and precision livestock farming. During my time at UKy, I strove to be a very productive and influential researcher. In addition to my research program, I contributed to the department's teaching program by providing instruction to undergraduate and graduate students in courses ranging from dairy cattle management, hands-on research methods, and to applied statistics.

3. Faculty Supervisor (11/2017 – 03/2022)

University of Kentucky Coldstream Dairy Research Farm.

From November 2017 until its closure, I was responsible for the oversight of the Dairy Coldstream Research Farm of the Department of Animal Sciences. This involved managing approximately 6 employees and providing oversight of students conducting work at the unit. I was responsible for managing the unit budget including receipts and expenditures, liaisons between the unit and other departments of the university, the Institutional Animal Care and Use Committees (IACUC), and other partner organizations.

1.3.3. CURRENT ACADEMIC POSITIONS AT OTHER UNIVERSITIES

Table 4. Current Positions at Other Universities

Rank or Title	University	Dates
Special Graduate Faculty	Federal University of Rio Grande do Sul, Department of Animal Sciences	2022-present
Special Graduate Faculty	University of Guelph, Veterinary Population Medicine	2021-present
Visiting Faculty	Sao Paulo University, Animal Science and Pastures Graduate Program	2021-present

2. AWARDS & HONORS

2.1. PROFESSIONAL AWARDS

2022 Lallemand Forward Award for Scientific Excellence in Dairy Nutrition, ADSA (American Dairy Science Association)

ADSA presents the Lallemand Forward Award for Scientific Excellence in Dairy Nutrition to stimulate and recognize outstanding achievement in research, teaching, extension, or industry in applied dairy nutrition by scientists during the first 10 postgraduation years of their professional career.

2018 University of Kentucky Undergraduate Research's 2018-19 Faculty Mentor of the Week

The University of Kentucky's Office of Undergraduate Research (OUR) presents the Research Faculty Mentor of the Week to highlight one of UK's outstanding and very much appreciated research faculty mentors who offer leadership and support to undergraduate student researchers.

2.2 AWARDS DURING TRAINING

2014	HAYNES Graduate Scholarship for the Advancement of Animal Welfare (\$1,050 CAD)
2014	C. W. Roberts Jr. Memorial Scholarship (\$1,400 CAD)
2012–2015	Brazilian National Council for Scientific and Technological Development (CNPq) full-time doctorate fellowship (\$23,500 CAD/year)
2012–2015	Brazilian National Council for Scientific and Technological Development (CNPq) full-time doctorate tuition fellowship (\$8,700 CAD/year)
2011	The Emerging Leaders in the Americas Program (ELAP) Scholarship (\$10,000 CAD)
2010–2012	Brazilian National Council for Scientific and Technological Development (CNPq) REUNI Master Scholarship (14,400 R\$/year)
2009	Undergraduate Thesis Scholarship – Federal University of Santa Catarina UFSC (2,160 R\$)
2008	Brazilian National Council for Scientific and Technological Development (CNPq) Technological and Industrial Initiation Scholarship (2,700 R\$)
2007	University Extension Project Scholarship – UFSC (2,160 R\$)
2006	University Extension Project Scholarship – UFSC (2,160 R\$)

3. RESEARCH

3.1. STATEMENT OF RESEARCH INTERESTS AND VISION

The overall goal of my research program is to improve dairy production systems regarding animal welfare, applied nutrition, and the use of precision dairy technologies. My research has been focused in the areas of dairy calf and heifer nutrition, animal behavior, precision dairy technologies, measurement of animal welfare levels on-farm, precision nutrition, and health and management decision support tools. I have achieved a high level of scientific output productivity during my academic training and in my years as faculty at the University of Kentucky, and demonstrate the same path forward at my commence at the University of Vermont. Importantly, I have maintained the capability to attract research support and publish my findings across a variety of areas of high relevance for the animal and dairy science fields. I plan to further establish my research program and enhance collaborations in the areas of dairy calf nutrition and behavior, precision dairy farming, and applied animal behavior. I plan to further strengthen and position my research group as an international leader in precision dairy farming and make the program a center of excellence for dairy calf nutrition and management. I am a “solution-focused” researcher, integrating and applying my knowledge of ethology, data science, engineering, dairy nutrition, and physiology to the management of dairy cattle across diverse systems.

3.2. RESEARCH FUNDING

I have received a total of **\$3,486,841** in funding as PI or Co-PI in competitive (6 grants) and privately sponsored (13 grants) research support. This is in addition to **\$1,967,020** of funding for 3 projects for which I was a collaborator. In total, I have participated in **\$5,453,861** of research funding as a faculty. I also acquired 4 international scholarships to visit research laboratories and for students and a visiting scholar to work in my research laboratory.

Table 5. Distribution of Funding as a Faculty, 2017-2023

Type of Funding	Total Funds	Percentage of Total
National Competitive Federal Grants	\$1,297,000	37.0%
Regional and Internal Competitive Grants	\$10,490	0.3%
International Competitive Grants	\$1,419,000	40.7%
Industry Grants	\$619,401	18.0%
Gifts	\$140,950	4.0%
Cumulative PI/Co-Pi	\$3,486,841	100%
Collaborator Grants	\$1,967,020	
Total Cumulative	\$5,453,861	

Table 6. Research Funding Summary

#	Project Title	Sponsor	Type	Budget
Principal Investigator				
1	Sustainable precision dairy farming: bridging animal welfare and stakeholder concerns about the use of precision dairy technologies	USDA-Agriculture and Food Research Initiative (AFRI)	National - Competitive	\$1,000,000
2	Enhancing the ability of precision dairy technology to detect disease in individually housed dairy calves	University of Kentucky	Internal - Competitive	\$4,300
3	Beta-glucans supplementation effects on dairy calves: metabolic profile dynamics, immune responsiveness, and GI tract and pulmonary epithelial tissue gene expression	Biorigins	Industry Grant	\$99,990
4	Effect of different colostrum constituents on passage rate, and apparent absorption efficiency in calves	Zinpro	Gift	\$40,000
5	Effects of yeast-derived microbial protein on transition dairy cow health and performance – part 2 – analysis	Alltech	Industry Grant	\$39,452
6	Real-time location and behavior monitoring in dairy cattle and the identification of heat stress-related behaviors with precision dairy technologies	SmartBow	Industry Grant	\$149,333
7	Evaluation of a green tea extract for association with apparent efficiency of absorption of colostrum replacer and neonatal vitality in dairy calves	Techmix	Gift	\$15,000
8	Utilizing <i>Megasphaera elsdenii</i> probiotic to improve the	MsBiotec	Gift	\$31,000

#	Project Title	Sponsor	Type	Budget
	performance of crossbred Holstein x Angus calves			
9	Effects of yeast-derived microbial protein on transition dairy cow health and performance – part 1	Alltech	Industry Grant	\$56,000
10	Development of an integrated behavioral data collection system for dairy calves and heifers to measure behavior activity and the use of environmental enrichment at the University of Kentucky dairy farm.	University of Kentucky	Internal - Competitive	\$6,190
11	Student Support Agreement	Alltech	Industry Grant	\$68,640
12	DairyMaster Technology Application – MooCow – The use of a behavior-monitoring collar, and the validation of it's precision and accuracy to measure rumination, feeding, and resting time of lactating dairy cattle.	Dairymaster	Industry Grants	\$84,734
13	Automatic body condition scoring and Herd Navigator use in commercial dairy farming	DeLeval	Industry Grant	\$111,252
14	Effects of rumen-protected lysine and methionine supplementation during the growing phase on Angus X Holstein steer calves: feeding behavior, ruminal development, microbiome diversity, gene expression, plasma metabolites, performance, and efficiency.	Zinpro	Gift	\$50,000
	PI Subtotal	14 Grants		\$1,755,891
	Co-Principal Investigator			
15	Supplementation of organic zinc and its association with sodium	FAPESP	International – Competitive	\$44,000

#	Project Title	Sponsor	Type	Budget
	butyrate additive, aiming to improve the performance and health of nursing calves.			
16	Evaluating the impact of prolonged cow-calf contact on dairy cow and calf health and welfare.	USDA-Agriculture and Food Research Initiative (AFRI)	National-Competitive	\$297,000
17	CalfComfort: nurturing positive welfare in calves	Norwegian FORSKER2 1	International Competitive	\$1,375,000
18	IDEXX Research Sampling	IDEXX	Gift	\$4,950
19	Gustaf de Laval Fund	DeLaval	Competitive/ Industry Grant	\$10,000
Co-PI Subtotal		4 Grants		\$1,730,950
Collaborator				
20	Managing risk associated with the use of automatic milking and feeding systems (robots) in dairy farms of the Southern region.	USDA-National Institute of Food and Agriculture (NIFA)	National - Competitive	\$49,976
21	Climate Care Cattle Farming Systems (CCC Farming)	Era-Net, EU	International-Competitive	\$1,877,044
22	TEMPERAMENTO Y ADAPTACIÓN DE VACAS HOLANDO A LOS SISTEMAS DE ORDEÑE. (Temperament and adaptation of dairy cows to voluntary milking systems)	INIA - Uruguay	International-Competitive	\$40,000
Collaborator Subtotal		3 Grants		\$1,967,020
Total				\$5,453,861

3.2.1. COORDINATOR OR PRINCIPAL INVESTIGATOR (PI) RESEARCH GRANTS

(1) IDEAS – AFRI/ USDA

Project: Sustainable precision dairy farming: Bridging animal welfare and stakeholder concerns about the use of precision dairy technologies.

Grant No.: 3200003908

Sponsor: United States Department of Agriculture, Agriculture and Food Research Initiative (AFRI) - Inter-Disciplinary Engagement in Animal Systems (IDEAS) program area.

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): Elizabeth Eckelkamp, University of Tennessee, Elizabeth Ventura, University of Minnesota, and 3 others.

Amount: \$1,000,000 USD

Years: 2021-2025

(2) Research Activity Award – UK Agriculture College

Project: Enhancing the ability of precision dairy technology to detect disease in individually housed dairy calves.

Sponsor: University of Kentucky

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$4,300.00 USD

Years: 2020-2021

(3) Beta-glucans supplementation for dairy calves.

Project: Beta-glucans supplementation effects on dairy calves: metabolic profile dynamics, immune responsiveness, and GI tract and pulmonary epithelial tissue gene expression.

Sponsor: Biorigins

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$99,990 USD

Years: 2019-2022

(4) University of Kentucky Dairy Science Program Research Support- Colostrum

Project: Effect of different colostrum constituents on passage rate, and apparent absorption efficiency in calves.

Sponsor: Zinpro

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$40,000 USD

Years: 2020-2022

(5) University of Kentucky Dairy Science Program Research Support

Project: Effects of Yeast-Derived Microbial Protein on Transition Dairy Cow Health and Performance – Part 2 – Analysis

Grant No.: 3048113779

Sponsor: Alltech

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$39,452 USD

Years: 2018

(6) Real-time Location System for Monitoring Dairy Cattle Behavior

Project: Real-Time Location and Behavior Monitoring in Dairy Cattle and the Identification of Heat Stress-Related Behaviors with Precision Dairy Technologies.

Grant No.: 3048113718

Sponsor: SmartBow

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$149,333 USD

Years: 2018

(7) Dairy Calf Research Support

Project: Evaluation of a green tea extract for association with apparent efficiency of absorption of colostrum replacer and neonatal vitality in dairy calves.

Sponsor: Techmix

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$15,000 USD

Years: 2018

(8) Research Support Dairy Cattle Behavior and Welfare

Project: Utilizing *Megasphaera elsdenii* probiotic to improve the performance of crossbred Holstein x Angus calves.

Sponsor: MsBiotech

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$31,000 USD

Years: 2018-2021

(9) Effect of transition cow program on cow behavior and milk production

Project: Effects of Yeast-Derived Microbial Protein on Transition Dairy Cow Health and Performance – Part 1.

Grant No.: 3048113107

Sponsor: Alltech

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$56,000 USD

Years: 2018-2020

(10) Research Activity Award – UK Agriculture College

Project: Development of an integrated behavioral data collection system for dairy calves and heifers to measure behavior activity and the use of environmental enrichment at the University of Kentucky dairy farm.

Sponsor: University of Kentucky

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$6,190 USD

Years: 2017-2019

(11) Student Support Agreement

Project: Support funding for M.S. student

Sponsor: Alltech

Grant No.: 3048113290

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$68,640 USD

Years: 2017-2020

(12) DairyMaster Technology Application

Project: DairyMaster Technology Application – MooCow – The use of a behavior-monitoring collar, and the validation of its precision and accuracy to measure rumination, feeding, and resting time of lactating dairy cattle.

Grant No.: 3048113513

Sponsor: Dairymaster

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$84,734 USD

Years: 2017-2019

(13) Automatic body condition scoring and Herd Navigator use in commercial dairy farming

Project: Automatic body condition scoring and Herd Navigator use in commercial dairy farming.

Grant No.: 3048113318

Sponsor: DeLaval

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$111,252 USD

Years: 2016-2019

(14) University of Kentucky Dairy Science Program Research Support- Zinpro

Project: Effects of rumen-protected lysine and methionine supplementation during the growing phase on Angus X Holstein steer calves: feeding behavior, ruminal development, microbiome diversity, gene expression, plasma metabolites, performance, and efficiency.

Sponsor: Zinpro

PI: **Joao H. C. Costa**, University of Kentucky

Co-PI(s): None

Amount: \$50,000 USD

Years: 2022-2025

3.2.2 – CO-PRINCIPAL INVESTIGATOR (CO-PI) RESEARCH GRANTS

(15) Supplementation of organic zinc and its association with sodium butyrate additive, aiming to improve the performance and health of nursing calves_ FAPESP.

Project: Supplementation of organic zinc and its association with sodium butyrate additive, aiming to improve the performance and health of nursing calves.

Sponsor: FAPESP-SP

PI: Márcia Saladini Vieira SALLES – Instituto de Zootecnica - Ribeirão Preto

Co-PI(s): **Joao Costa**, University of Kentucky and 4 others.

Amount: \$44,000 USD

Years: 2022-2024

(16) Welfare of Agricultural Animals – AFRI/ USDA

Project: Evaluating the impact of prolonged cow-calf contact on dairy cow and calf health and welfare..

Sponsor: United States Department of Agriculture, Agriculture and Food Research Initiative (AFRI) – Welfare of Agriculture Animals (1251) program area.

PI: **Cretzinger, KC**, University of Wisconsin – River Falls

Co-PI(s): Costa, J. H. C. (University of Vermont), Renaud, D. L. (University of Guelph), Holtkamp, C. (University of Wisconsin-River Falls)

Amount: \$297,000 USD

Years: 2023-2025

(17) Norwegian FORSKER21 Project, Norway

Project: CalfComfort: Nurturing positive welfare in calves

Sponsor: Norwegian FORSKER21 Project

PI: **Cecilie Mejdell**, VETERINÆRINSTITUTTET

Co-PI(s): **Joao Costa**, University of Kentucky and 12 others.

Amount: \$1,375,000 USD

Years: 2021-2025

(18) IDEXX Research Sampling

Project: IDEXX Research Sampling.

Sponsor: IDEXX

PI: **McCleod, Costa**, University of Kentucky

Co-PI(s): **Joao H. C. Costa**, University of Kentucky

Amount: \$4,950 USD

Years: 2018-2019

(19) Gustaf de Laval Fund

Project: Effects of a voluntary soaking system on the behavior, physiology, and production of dairy cows milked in voluntary milking systems

Sponsor: DeLaval

PI: **Mazon, Gustavo**, University of Kentucky

Co-PI(s): **Joao H. C. Costa**, University of Kentucky

Amount: \$10,000 USD

Years: 2022-2023

3.2.3 – COLLABORATOR RESEARCH GRANTS

(20) Southern Risk Management Education Center: SRMEC

Project: Managing risk associated with the use of automatic milking and feeding systems (robots) in dairy farms of the Southern region.

Sponsor: USDA- National Institute of Food and Agriculture (NIFA)

PI: **Gonzalo Ferreira**, Virginia Tech

Collaborator: **Joao H. C. Costa**, University of Kentucky

Amount: \$49,976 USD

Years: 2020-2021

(21) Climate Care Cattle Farming Systems (CCC Faming)

Project: Climate Care Cattle Farming Systems (CCC Faming)

Sponsor: **ERA-NETS – International Collaboration Scientific Network**

PI: **Abele Kuipers**, Wageningen University & Research and 16 others.

Collaborator: **Joao H. C. Costa**, University of Kentucky

Amount \$1,877,044

Years: 2019-2025

(22) Temperament and adaptation of dairy cows to voluntary milking systems

Project: Temperament and adaptation of dairy cows to voluntary milking systems

Sponsor: **INIA Linea 1 – Programas Nacionales de Investigación de Uruguay**

PI: **Jéssica Tatiana Morales**, INIA La Estanzuela and 7 others.

Collaborator: **Joao H. C. Costa**, University of Kentucky

Amount \$40,000

Years: 2023-2027

3.2.4 – CO-PRINCIPAL SCHOLARSHIPS AND FELLOWSHIPS

(23) PDIP - Visitante do Exterior / Continuous Funding Stream (FAPESP)

PI: **Lenira Zadra**

Co-PI: **Joao H. C. Costa**, University of Vermont

Amount: \$7,885 USD

Years: 2021

**(24) Coordination for the Improvement of Higher Education Personnel (CAPES)-
Brazil Visiting Scholar Scientific Fellowship**

PI: **Carla Bittar**

Co-PI: **Joao H. C. Costa**, University of Kentucky

Amount: \$3,885 USD

Years: 2021

(25) Lyman T. Johnson Postdoctoral Fellowship

PI: **Ivelisse Robles**

Co-PI: **Joao H. C. Costa**, University of Kentucky

Amount: \$49,476 USD

Years: 2019

**(26) Scientific and Technological Research Council of Turkey (TUBITAK) Scientific
Abroad Fellowship**

PI: **Ahmet Önal**

Co-PI: **Joao H. C. Costa**, University of Kentucky

Amount: \$30,000 USD

Years: 2018

4. PUBLICATIONS

I have published 80 scientific publications, 68 of which are scientific journal articles. My work has been cited over 2,500 times with an average citation rate of 36.56 per article (Google scholar *h*-index 28; *i10*-index= 44). The criterion in choosing the refereed scientific journals to publish my work is the relevance of the readership. For my work in animal welfare, it is particularly important that the results reach key individuals that can assist in delivering findings and innovations to other scientists and to animal users. In nearly all cases, I have targeted my research in the highest quality international journals available in my field of research. The majority of my work is published in the open access Journal of Dairy Science (n=39), which is the top-ranked journal in the Agriculture, Dairy, and Animal Science category (2021 impact factor: 4.03) and in other open access journals such as Scientific Reports (2021 impact factor: 4.38), and Frontiers in Veterinary Science (2021 impact factor: 3.41).

Table 7. Summary of Total Publications

Article Type	As faculty	Corresponding author	Graduate student under my supervision	Total
Peer-Reviewed Journal Articles	47	24	23	68
Complete Articles in Conference Proceedings	4	4	4	4
Peer-reviewed Extension Articles	0	5	4	5
Books	1	0	0	1
Book Chapters	0	2	2	2
Total	52	35	33	80

Table 8. Distribution Summary of Peer-Reviewed Journal Articles by Journal

Journal name	Impact factor	Total
Journal of Dairy Sciences	4.03	39
Animals	2.75	5
Plos One	3.24	4
Frontiers in Veterinary Science	3.41	3
Scientific Reports	4.38	2
Livestock Science	1.94	2
JDS Communications	*	2
Tropical Animal Health	1.55	2
Translational Animal Science	1.23	2
Frontiers in Animal Science	*	2
Journal of the ASABE	1.18	1
Animal Feed and Technology	3.24	1
Canadian Journal of Animal Science	1.01	1
Journal of Animal Science	3.15	1
Royal Society Open Science	2.96	1
Preventive Veterinary Medicine	2.67	1
Animal Production Science	1.53	1
Archivos de Zootecnia	0.46	1
IEEE	3.47	1
Total		68

**Journal without an Impact Factor. Both journals are new and upcoming but have not been indexed long enough for a publication of an impact factor.*

4.1 PEER REVIEWED JOURNAL ARTICLES

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate student, graduate student, or postdoctoral fellow under Costa's supervision.

- (1) Edwards, K., LeBlanc, S., De Vries, T., Steele, M., **Costa, J. H. C.**, and Renaud, D. *In press*. Barriers to recording calf health data on dairy farms in Ontario. J. Dairy Sci. Com.
- (2) Toledo, A., Dondé, S., da Silva, A. P., Cezar, A., Coelho, M., Tomaluski, C. R., Virgínio Junior, G., **Costa, J. H. C.**, and Bittar, C. *In press*. Whole-plant flint corn silage inclusion in total mixed rations for pre - and post -weaned dairy calves. J. Dairy Sci.
- (3) Casella, E., Cantor, M. C., Setser, M. M. W., Silvestri, S., and **Costa, J. H.**† 2023. A Machine Learning and Optimization Framework for the Early Diagnosis of Bovine Respiratory Disease. IEEE Access. <https://doi.org/10.1109/ACCESS.2023.3291348>
- (4) Goetz, H., Creutzinger, K. C., Kelton, D., **Costa, J. H. C.**, Winder, C., and Renaud, D. 2023. A randomized controlled trial investigating the effect of long-distance transportation on surplus dairy calves: Part I. Impact on health and growth. J. Dairy Sci. <https://doi.org/10.3168/jds.2022-22366>
- (5) Goetz, H., Creutzinger, K. C., Kelton, D., **Costa, J. H. C.**, Winder, C., Gomez, N., and Renaud, D. 2023. A randomized controlled trial investigating the effect of long-distance transportation on surplus dairy calves: Part II. Impact on hematological variables. J. Dairy Sci. <https://doi.org/10.3168/jds.2022-22367>
- (6) **Grinter, L. N.**‡, Mazon, G., and **Costa, J. H. C.**† 2023. Voluntary heat stress abatement system for dairy cows: does it mitigate the effects of heat stress on physiology and behavior? J. Dairy Sci. <https://doi.org/10.3168/jds.2022-21802>
*Editor's Choice
- (7) Michalski, E. ‡, Woodrum Setser, M. M., Mazon, G., Neave, H. W., and **Costa, J. H.**† 2023. Personality of individually housed dairy-beef crossbred calves is related to performance and behavior. Front. Ani. Sci. <https://doi.org/10.3389/fanim.2022.1097503>
- (8) Carter, H. S. M., M. A. Steele, **J. H. C. Costa**, and D. L. Renaud. 2022. Evaluating the effectiveness of colostrum as a therapy for diarrhea in preweaned calves J. Dairy Sci. <https://doi.org/10.3168/jds.2022-22187>
- (9) da Silva, M. D., da Silva, A. P., Coelho, M. G., Poczynek, M., Toledo, A. F., Virgínio Junior, G. F., **Costa, J. H. C.**, and Bittar, C. M. M. 2022. Evaluation of different liquid diets associated with environmental enrichment in the performance and behaviour of dairy calves. Tropical Animal Health and Production. <https://doi.org/10.1007/s11250-022-03331-3>

- (10) Reis, M. E., Cantor, M. C.[‡], Bittar, C. M. M., **Costa, J. H. C.[†]** 2022. Association of a green tea extract with serum immunoglobulin G status and neonatal vitality in newborn dairy calves. *J. Dairy Sci.* <https://doi.org/10.3168/jds.2022-22099>
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4.2. COMPLETE ARTICLES IN CONFERENCE PROCEEDINGS

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate or graduate student under Costa's supervision.

- (1) Casella, E., Cantor, M.C. ‡, Silvestri, S., Renaud, D.L., and **Costa, J. H. C.** † 2022. Cost-aware inference of Bovine Respiratory Disease in calves using precision livestock technology. In: International Conference on Distributed Computing in Sensor Systems. Institute of Electronics and Engineers. IEEE May 2022.
- (2) Mazon, G. ‡, Montgomery, P.D., Hayes, M., Jackson, J., and **Costa, J. H. C.** † 2020. Development and validation of an autonomous radio-frequency identification controlled soaking system for dairy cattle. In: An American Society of Agricultural and Biological Engineers (ASABE). 2020 ASABE Annual International Virtual Meeting. <https://doi.org/10.13031/aim.202000736>
- (3) Rice, E. ‡, Ferrell, J., Vanzant, E., Jackson, J., and **Costa, J. H. C.** †. 2020. Real-time localization system for livestock dairy cattle: Validation of static positioning in a commercial facility. In: American Society of Agricultural and Biological Engineers (ASABE). 2020 ASABE Annual International Virtual Meeting. <https://doi.org/10.13031/aim.202000797>
- (4) Falk, M.L. ‡, Cantor, M.C. ‡, Hayes, M., Jackson, J., and **Costa, J. H. C.** † 2018. Validation of radio frequency identification with a current transducer to quantify the use of an automatic grooming brush in pre-weaned dairy calves. In: An American Society of Agricultural and Biological Engineers (ASABE). 10th International Environmental Livestock Symposium, 2018, Omaha, NE. <https://doi.org/10.13031/iles.18-107>

4.3. PEER-REVIEWED EXTENSION ARTICLES

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate or graduate student under Costa's supervision.

- (1) Azevedo, R.A., Meneses, R.M., Silva, R.O.S., Coelho, S.G., Chiogna Júnior, V., Gomes, V., Rotta, P.P., Teixeira, A. M., Bittar, C.M.M., Zambrano, J.A., Santos, J.E.P., **Costa, J.H.C.**, Martins, L.F., Antunes, L.C.M.S., Campos, M.M., and Tiveron, P.M. 2021. Alta CRIA 2021. (Print and Web). <http://dx.doi.org/10.26626/978-65-5668-058-3.2021B0001>

- (2) Mazon, G.[‡], Amaral-Phillips, D. M., and **Costa, J. H. C.[†]**. 2018. “Getting the Most from Automatic Dairy Calf Feeders”. Kentucky Dairy Notes, August 2018. (Print and Web).
- (3) Grinter, L. N.[‡], Amaral-Phillips, D. M., and **Costa, J. H. C.[†]**. 2018. “When and how to disbud dairy calves: short- and long-term pain management and the latest scientific information”. Kentucky Dairy Notes, November 2018. (Print and Web).
- (4) France, T. L.[‡], Amaral-Phillips, D. M., and **Costa, J. H. C.[†]**. 2018. “Cleaning Out and Restarting your Compost Bedded Pack Barn”. Kentucky Dairy Notes. October 2018. (Print and Web).
- (5) Hawkins, A.[‡], **Costa, J. H. C.**, Amaral-Phillips, D. M. 2018. “What is it costing you to raise your replacement dairy heifers?”. Kentucky Dairy Notes. December 2018. (Print and Web).

4.4. PEER REVIEWED MANUSCRIPTS IN REVIEW

[†] Publication in which Costa is the corresponding author.

[‡] Publication in which the first author is an undergraduate or graduate student under Costa’s supervision.

- (1) Kelly, K. M., Poole, D. H., Smith, G. W., **Costa, J. H. C.**, Geiger, A.J. and Ward, S.H.. *In review*. Impacts of diet and enrichment interactions on the performance of Holstein heifers. Trans. J. Animal Sci.
- (2) Woodrum Setser, M. M.[‡], Neave, H. W., and **Costa, J. H. C.[†]** *In review*. The history, implementation, and application of personality tests in livestock animals. Applied Anim. Behav. Sci.
- (3) Cantor, M. C., Welk, A. A., **Costa, J. H. C.**, Creutzinger, K. C., Woodrum Setser, M. M., and D. L. Renaud. *In review*. The development and cross-validation of milk feeding behavior alerts for identifying calves at-risk for a diarrhea bout: A diagnostic accuracy study. J. Dairy Sci.
- (4) Woodrum Setser, M. M. [‡], Neave, H. W., and Costa, J. H. C. [†] *In review*. Can individual variation in food neophobia explain variation in dairy calf feeding behavior patterns? Applied Anim. Behav. Sci.

4.5. BOOKS

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate or graduate student under Costa's supervision.

Books prior to joining University of Kentucky

- (1) Machado Filho, L. C. P., Machado, L. C. P., Tresoldi, G., Menezes, D., Lenzi, A. G., Berton, C. T., Rodrigues, L. G., and **Costa, J. H. C.** 2010. Guia prático para a produção de leite com qualidade ética: Pastoreio racional voisin. (Free translation: Practical guide to the ethical production of milk: Managed intensive rotational grazing) 1 ed., v. 1, p. 32. Florianópolis, SC: ISBN: 9788588050051.

4.6. BOOK CHAPTERS

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate or graduate student under Costa's supervision.

- (1) **Costa, J. H. C.**†, Cantor, M. C. ‡, Neave, H. W. 2018. Bovine diet. In: J. Vonk, T. K. Shackelford (eds.), Encyclopedia of Animal Cognition and Behavior. Springer International Publishing - Springer Nature 2018. https://doi.org/10.1007/978-3-319-47829-6_812-1
- (2) **Costa, J. H. C.**†, Cantor, M. C.‡, Neave, H. W. 2018. Bovine life history. In: J. Vonk, T. K. Shackelford (eds.), Encyclopedia of Animal Cognition and Behavior. Springer International Publishing - Springer Nature 2018. https://doi.org/10.1007/978-3-319-47829-6_837-1

4.7. OTHER MEDIA

4.7.1. NON-REFEREED ARTICLES

† Publication in which Costa is the corresponding author.

‡ Publication in which the first author is an undergraduate or graduate student under Costa's supervision.

- (1) Pereira, J. M. V., Mazon, G., and Costa, J. H. C. 2022. Tecnologias de precisão na pecuária de leite - O impacto no bem-estar animal e a visão do consumidor (Precision Dairy Technologies: animal welfare impacts and the public perception). Revista Leite Integral (Brazil). July 2022. (Print and Web).
- (2) Mazon, G., and **Costa, J. H. C.** †. 2022. Assunto Ácido: acidose em bezerras (A sore subject: subacute ruminal acidosis in calves). Revista Leite Integral (Brazil). February 2022. (Print and Web).
- (3) James, R., Cantor, M.C., and **Costa, J. H. C.** †. 2022. How can I use automated feeder data to better manage calf health? Calfblog. May 2022. (Web).

- (4) James, R., Cantor, M.C., and **Costa, J. H. C.** [†] 2022. Automated calf feeders: another tool which may raise the bar for top notch producers to raise calves. Calfblog. April 2022. (Web).
- (5) Rice, E.M., Cantor, M.C., Woodrum Setser, M.M., and **Costa, J. H. C.** [†] 2021. From birth to weaning: a calf care guide. Kentucky Dairy Development Council. March 2021. (Print).
- (6) **Costa, J. H. C.** [†], Reis, M. E., Mazon, G., Cantor, M. C., Neave, H. W. 2020. Pensando Junto (Thinking together: benefits of group and pair housing for dairy heifers). Revista Leite Integral (Brazil). October 2020. (Print and Web).
- (7) Cantor, M. C., Neave, H. W. and **Costa, J. H. C.** [†] 2020. Effectively raising pair housed calves: common questions from transitioning farmers. Progressive Dairy. September 2020. (Print and Web).
- (8) **Costa, J. H. C.** [†], Cantor, M. C., Neave, H. W. and Reis, M. E. 2020. Making the transition to pair-housed calves: two heads are better than one. Progressive Dairy. May 2020. (Print and Web).
- (9) Mazon, G. and **Costa, J. H. C.** [†]. 2018. Criacao Otimizada (Optimizing calf raising). Revista Leite Integral(Brazil). May 2018 (Print).
- (10) Mazon, G. and **Costa, J. H. C.** [†]. 2018. O que Veremos no Futuro? (What is coming regarding dairy precision technology?). Revista Leite Integral (Brazil). January 2018 (Print).
- (11) **Costa, J. H. C.** [†], Amaral-Phillips, D.M., Mazon, G. 2018. Group Housing of dairy calves: Key management points. Progressive Dairyman Canada. August 2018. (Print and Web).
- (12) **Costa, J. H. C.** [†], and M. A. Steele. 2017. “Quero mais! Como adotar um programa de alimentação de bezerras com maiores quantidades de leite, usando ou não um alimentador automático.” (I want more! Utilizing an enhanced calf feeding program with or without an automated feeder). Revista Leite Integral. October. (Print and Web).
- (13) **Costa, J. H. C.** 2017[†]. “How to successfully raise calves in groups”. 2017. Insights - Alberta Farm Animal Care Association (AFAC) Magazine. April. (Print and Web). <https://www.afac.ab.ca/how-to-successfully-raise-calves-in-groups/>
- (14) **Costa, J. H. C.** [†], and M. A. Steele. 2017. “How to adopt an enhanced calf feeding program with or without an automated feeder”. Progressive Dairyman. (Canada and USA editions) July. (Print and Web). <https://www.progressivedairycanada.com/topics/calves-heifers/how-to-adopt-an-enhanced-calf-feeding-program-with-or-without-an-automated-feeder>

- (15) **Costa, J. H. C.† 2016.** “Best time to pair house calves? It’s simple - as soon as possible!” Progressive Dairyman (Canada and USA editions). November. (Print: Cover article).
- (16) **Costa, J. H. C.† 2015.** “Organic livestock practices and animal welfare standards. How do current practices measure up?” British Columbia Organic Growers. March. (Print: Cover article).
- (17) **Costa, J. H. C.†, Longo, C., Balcão, L. F., Daros, R. R., Cardoso, C. S., Hötzel, M. J. 2014.** “Bem-estar animal em propriedades familiares de Santa Catarina”, Revista Leite Integral (Brazil). April, 2014 (Print).

4.7.2. MEDIA FEATURES

- (1) **Costa, J. H. C.† 2023:** The dairy podcast show: #45 - To drive the dairy industry forward: the role of precision feeding, by Dr. João H. Costa. July, 2023 <https://www.dairypodcastshow.com/blog/45> (Online).
- (2) **Costa, J. H. C.† 2022.** Interview about Animal Welfare and Precision Livestock Farming. Conexão Leite e Derivados (Milk and Dairy Products Connection). Canal AgroMais, Julho 8, 2022 (TV and Web). <https://www.youtube.com/watch?v=GtlEELY2zSY>
- (3) **Costa, J. H. C.† 2022.** Interview about Precision Livestock Farming. Jornal Terra Viva (TerraViva Chanel News). Canal TerraViva, March 10, 2022 (TV)
- (4) Hoard’s Dairyman. 2020. “Tech start-ups ready to solve major issues in dairy.” (Online). <https://hoards.com/article-28848-tech-start-ups-ready-to-solve-major-issues-in-dairy.html>
- (5) Progressive DairyMan: USA. 2019. “Florida Dairy Production Conference highlights science and social media.” (Print and Online). <https://www.progressivedairy.com/news/event-coverage/progressive-events-florida-dairy-production-conference-highlights-science-and-social-media>
- (6) The Atlantic: USA. 2019. “The Cow-Milking Robots Keeping Small Farms in Business.” (Print and Online). <https://www.theatlantic.com/business/archive/2018/10/young-dairy-farmers/567937/>
- (7) PLOS Science Wednesday: Ask me anything science forum on Reddit. 2016. “Bovine Emotion edition.” January, 27th, 2016. <https://doi.org/10.15200/winn.145389.97004> (Online).
- (8) Progressive DairyMan: Canada. 2015. “Feeding forages to young calves to add a scratch factor.” (Print).
- (9) Hoards Dairyman. 2015. “Calves grow faster in pairs.” (Print).

- (10) Milk South Africa – MilkSA.co.za. The research column. 2015. “Early pair housing increases solid feed intake and weight gains in dairy calves.” (Online). <https://milksa.co.za/research/research-column/early-pair-housing-increases-solid-feed-intake-and-weight-gains-dairy>
- (11) Texas Dairy Matters. Texas A&M Agrilife extension. 2015. “Pair Housing for Calves.” (Print and Online).
- (12) ADSA Graduate Student Newsletter. 2012. “Summary of the Dairy Industry in Brazil” (Online). <https://adsagsd.wordpress.com/2012/12/14/summary-of-the-dairy-industry-in-brazil/>

5. INVITED PRESENTATIONS

My network connections with local, national, and international industry have resulted in 34 invited international and 15 invited national presentations to producers, nutritionists, veterinarians, and other stakeholders regarding dairy cattle management and welfare since my appointment at the University of Kentucky. These invited research talks to discuss dairy calf and cow management and nutrition have spanned 15 countries and 4 continents. Even as a young scientist, I have been privileged to be an invited speaker at the principal scientific meetings in my field of research. This demonstrates the influence of our research group and our deep involvement in the critical discussions of many influential topics of the dairy industry.

Table 9. Distribution of Scientific Presentations

Type of Presentation	Total
International Invited/Plenary Talks	52
National Invited/Plenary Talks	22
Total	96

5.1. PRESENTATIONS

5.1.1. INVITED INTERNATIONAL PRESENTATIONS

- (1) **Costa, J. H. C.** 2023. Inovação na pecuária leiteira: zootecnia de precisão (Innovations in the dairy production: precision dairy technology). 2023 Mega Keite Meeting. Belo Horizonte, MG, Brazil. June 7, 2023.
- (2) **Costa, J. H. C.** 2023. Feeding the individual, not the group: utilizing behavioral and nutritional data to improve the welfare of ruminants. (Workshop). 11th International Symposium on the Nutrition of Herbivores. Florianópolis, SC, Brazil. June 5, 2023.

- (3) **Costa, J. H. C. 2023.** “WEBINAR IZ| Desafios e oportunidades para o bezerro macho leiteiro (Invite webinar "Challenges and Opportunities for the Dairy Male Calf"). Instituto de Zootecnia – Ribeirao Preto/ FUNDAG. Online. June 13, 2023. https://www.youtube.com/watch?v=UTNQQu_tAHo
- (4) **Costa, J. H. C. 2023.** The best heifers are an investment: short- and long-term effects of dairy calf housing, technology use, and nutrition (Invited Talk). Calf Care Symposium. Torreon, Mexico, May 3, 2023.
- (5) **Costa, J. H. C. 2023.** Social housing for dairy calves: the interaction between environment, nutrition, and individualized management. 2023 Smart Calf Rearing Conference. Kaiserslautern, Germany. March 27, 2023.
- (6) **Costa, J. H. C. 2023.** The success of a dairy calf starts at birth: effects of early socialization and enhanced nutrition. 2023 Tavistock Veterinarians Producer Meeting. Cambridge, ON, Canada. February 22, 2023.
- (7) **Costa, J. H. C. 2023.** The success of a dairy calf starts at birth: effects of early socialization and enhanced nutrition. 2023 Dairy Producer Day - Les Meuneries Mondou. Casselman, ON, Canada. February 21, 2023.
- (8) **Costa, J. H. C. 2022.** “Tecnologia de precisão na bovinocultura leiteira (Precision dairy technology uses on dairy cattle management).” III CIPEL - Congresso Internacional de Pecuária Leiteira da Amazônia Ocidental, Rio Branco, AC, Brazil, November 8th, 2022.
- (9) **Costa, J. H. C. 2022.** “Guest Lecture: The use of precision technologies to monitor, and manage dairy cattle: use on research”. Federal University of Acre, Rio Branco, AC, Brazil, November 6th, 2022.
- (10) **Costa, J. H. C. 2022.** Precision dairy technologies: utilizing PDT in applied ethology research (Workshop). Encontro Annual de Etiologia. Annual Meeting of Ethology. November 2022.
- (11) **Costa, J. H. C. 2022.** A review of the use and evaluation of precision dairy technologies to monitor dairy cows and calves: how to use precision dairy technology in applied ethology research? (Invited Talk). Encontro Annual de Etiologia. Annual Meeting of Ethology. November 2022.
- (12) **Costa, J. H. C. 2022.** Key social behavioral aspects influencing calf and heifer performance and health. 2022 ADSA Annual Meeting. Kansas City, MO, USA. June 19-22, 2012
- (13) **Costa, J. H. C. 2022.** Considerações sobre o manejo individual ou coletivo de bezerras leiteiras (Considerations about individual and group-housing of dairy calves). Plenary Talk. Noite com as bezerras (Calf Nights). Instituto de Zootecnia Ribeirão Preto, SP, Brazil. Online. September, 2022.

- (14) **Costa, J. H. C.** 2022. Precision Livestock Farming (PLF) Technologies Use in the Study of Animal Behavior: dairy cattle as an example. Plenary Talk. Second International Meeting on Behavior, Evolution, and Ecology (IMBEE). Online. September 15, 2022.
- (15) **Costa, J. H. C.** 2022. Avanços no uso de tecnologias de precisão leiteira para o manejo de bezerras (Updates on the use of precision dairy technologies to manage calves). Invited lecture. Curitiba, Paraná, Brazil. March 8, 2022.
- (16) **Costa, J. H. C.** 2022. Criação de Bezerras e Novilhas (Updates on Calf and Heifer Rearing - Invited Talk). Do Brasil para o mundo: 1º Fórum Internacional de Bovinos Leiteiros da Cooperativa Castrolanda (From Brazil to world: Castrolanda Co-op 1st International Dairy Cattle Forum). Online. March 30, 2022.
- (17) **Costa, J. H. C.** 2022. Dairy cattle behavior in modern production systems: Are we forgetting about the cows' individuality? 2022 CCSAW Research Seminar series, University of Guelph. Guelph, ON, Canada. February 9, 2022.
- (18) **Costa, J. H. C.** 2021. Tecnologia de precisão na bovinocultura leiteira (Precision Dairy Farming - Invited Talk). III Congresso Internacional de Pecuária leiteira da Amazônia Ocidental (3rd International Meeting of Ocidental Amazon Dairy Farming). Online. December 8, 2021.
- (19) **Costa, J. H. C.** 2021. Nutrição e manejo pós desmama: como melhorar a performance e a eficiência financeira (Post-weaning nutrition and management: how to improve your economic efficiency and performance - Invited Talk). 10º Simpósio Brasil Sul de Bovinocultura de Leite (10th Southern Brazilian Dairy Cattle Symposium). Online. November 10 2021.
- (20) **Costa, J. H. C.** 2021. Calf Behavior Related to Milk Feeding (Invited Talk). 41st ADSA Discovery Conference: Health Management of Calves. Itasca, IL, USA, October 27, 2021.
- (21) **Costa, J. H. C.** 2021. The future of dairy calf housing: group housing systems and the use of precision technologies (Invited Talk). European Federation of Animal Science: EAAP Annual Meeting 2021. Davos, Switzerland, August 31, 2021.
- (22) **Costa, J. H. C.** 2021. Comportamento, tecnologias e pecuária de precisão aplicáveis para rebanhos leiteiros (Applied dairy cattle behavior, technologies, and precision farming - Invited Talk). Primeiro Fórum de Bem Estar Animal CEVA Saúde Animal (CEVA Animal Health: First Animal Welfare Forum). Online. September 23, 2021.
- (23) **Costa, J. H. C.** 2021. Dietas e ambientação para bezerras leiteiras de alta performance (Housing and diets for high-performance dairy heifers - Invited Talk). 2021 Interleite Experience. Online. August 5, 2021.

- (24) **Costa, J. H. C.** 2021. Opções de sistemas de alojamento e uso de tecnologias de precisão na criação de bezerras (Housing and technology options for dairy heifers - Invited Talk). On-farm Academy Calf Rearing Masterclass. Online. July 1, 2021.
- (25) **Costa, J. H. C.** 2021. Impactos do Monitoramento Animal nas Fazendas de Leite (Impacts related to dairy cattle monitoring - Invited Talk). Aula ao vivo de manejo Cowmed (Cowmed's live management class). Online. April 27, 2021. <https://www.youtube.com/watch?v=-HIIyof81vo>
- (26) **Costa, J. H. C.** 2020. Precision livestock farming and animal welfare: future trends and opportunities. Animal Welfare and Behaviour AwayDay. Bristol, UK (Virtual), December 9, 2020.
- (27) **Costa, J. H. C.** 2020. The success of a dairy calf starts at birth: effects of early socialization and proper nutrition. 2020 Healthy Calf Conference. Guelph, ON, Canada. November 24, 2020.
- (28) **Costa, J. H. C.** 2020. Vantagens e possibilidades da fazenda 4.0 (Advantages and possibilities for agriculture 4.0 - Invited Talk). 3rd Ideas for Milk Live Session. Online. November 12, 2020.
- (29) **Costa, J. H. C.** 2020. Innovación y tecnología aplicada (Innovation and applicability of precision dairy technologies - Invited Talk). Jornada GIT de Grupo Chiavassa (GIT Journey's from Chiavassa's Group). Online. November 10, 2020. https://youtu.be/xwof_3VVkpM?t=4714
- (30) **Costa, J. H. C.** 2020. Herramientas de la ganadería de precisión para el estudio de la etología aplicada (Precision livestock farming: Tools to be used on applied ethology studies). 2nd Reunión del Grupo ALPA (Asociación Latinoamericana de Producción Animal). Online. September 23, 2020
- (31) **Costa, J. H. C.** 2020. Ganadería lechera de precisión: qué tenemos y qué queremos? Manejo nutricional comportamiento animal y electrónica (Precision livestock farming: what do we have and what do we want? Nutricional management, behavior and eletronics. Universidad Nacional de Uruguay: Ciclos de Seminários de Fisiologia. Montevideu, Uruguay. July 14, 2020
- (32) **Costa, J. H. C.** 2020. Pecuária Leiteira de Precisão: Escutando as Vacas (Precision Dairy Farming - Listening to the cows). 5th Forum Estadual do Leite (5th Dairy Production Meeting- Rio Grande do Sul State - Brazil). Não-me-Toque, RS, Brazil, March 5, 2020
- (33) **Costa, J. H. C.** 2019. "Production impacts of animal welfare in the dairy cattle production: from birth to culling (*Impacto do bem-estar animal na produção de leite: do parto ao descarte*). Castrolanda Cooperative International Seminar. Castro, PR, Brazil, September 12, 2019

- (34) **Costa, J. H. C.** 2019. “Guest Lecture: The use of precision technologies to monitor, and manage dairy cattle: group housing of calves, heat stress and nutrition”. Vetmeduni Vienna, Vienna, Austria, July 19, 2019
- (35) **Costa, J. H. C.** 2019. Curiosity Sessions. Precision Dairy Farming. Dairy NZ, Hamilton, New Zealand. December 13, 2019
- (36) **Costa, J. H. C.** 2019. Calf management based on data. 2019. Dairy Health Management CE program. Guelph, ON, Canada. June 19, 2019
- (37) **Costa, J. H. C.** 2019. Precision Dairy sensors and data commercially available. 2019 Dairy Health Management CE program. Guelph, ON, Canada. June 20, 2019
- (38) **Costa, J. H. C.** 2019. On-farm decision making based on data. 2019 Dairy Health Management CE program. Guelph, ON, Canada. June 20, 2019
- (39) **Costa, J. H. C.** 2019. Calf Management and welfare: influence of nutrition, socialization, performance, and welfare. 2019 International Dairy Nutrition Symposium (Nutrition and health from dairy calf to heifer). Ede-Wageningen, The Netherlands. January 17, 2019
- (40) **Costa, J. H. C.** 2019. The best heifers are an investment: short- and long-term effects of dairy calf housing and nutrition. 2019 Smart Calf Rearing conference. Guelph, ON, Canada. November 5, 2019
- (41) **Costa, J. H. C., M. Steele, and D. Renaud.** 2019. Answering producer questions about dairy calf rearing, nutrition and welfare. 2019 Producer Day: Smart Calf Rearing conference. Guelph, ON, Canada. November 2, 2019
- (42) **Costa, J. H. C.** 2019. The use of precision technologies to monitor, selectively treat and manage the nutrition of dairy calves. 2019 Shur-Gain Dairy Seminar. Stratford, ON, Canada. November 7, 2019
- (43) **Costa, J. H. C.** 2018. “Seminar: Precision Dairy Farming: the road into the future”. Seminar Series of the Universidade de São Paulo – ESALQ, Piracicaba, SP, Brazil. September 18, 2018
- (44) **Costa, J. H. C.** 2018. Dairy calf and heifer management: nutrition, socialization and housing effects on welfare and public perception. 2018 ASAS-CSAS Annual Meeting & Trade Show. Vancouver, BC, Canada. July 9, 2018
- (45) **Costa, J. H. C.** 2018. Are we raising “normal” cows? Effects of early life diet, feeding plan, and housing on the natural behavior of dairy cattle. 2018 ASAS-CSAS Annual Meeting & Trade Show. Vancouver, BC, Canada. July 10, 2018
- (46) **Costa, J. H. C.** 2018. “Invited Plenary: Welfare related research and funding opportunities in the USA”. 5th Dairy Care Conference, Thessaloniki, MK, Greece. March 20, 2018

- (47) **Costa, J. H. C.** 2018. “What You Need to Know Before, During and After Transitioning to Group Housing of Calves: Key Considerations”. Western Canadian Dairy Seminar (WCDS). Red Deer, AB, Canada. March 7, 2018
- (48) **Costa, J. H. C.** 2018. “Seminar: Group Housing of Calves and High Allowance of Milk: Key Considerations”. Seminar Series of the Norwegian Veterinary Institute, Oslo, Norway. March 23, 2018
- (49) **Costa, J. H. C.** 2016. What have we found? Lameness and skin lesion prevalence in intensive dairies in the Region of Castro. Animal Welfare Seminar. Castro, PR, Brazil. December 14, 2016
- (50) **Costa, J. H. C.** 2015. Organic livestock practices and animal welfare standards. How do current practices measure up? British Columbia Organic Growers Conference. Chilliwack, BC, Vancouver. February 26, 2015
- (51) **Costa, J. H. C.,** and Balcão, L. F.. 2010. Managed intensive rotational grazing: The “Voisin System”. Agronomy Academic Week of UFSM. Frederico Westphalen, RS, Brazil. October 21, 2010
- (52) **Costa, J. H. C.,** Hidalgo, D. E., and Bruch, J. 2007. Managed intensive rotational grazing: The “Voisin System”. The Brazilian Congress of Agroecology. Guarapari, ES, Brazil. October 3, 2007

5.1.2. INVITED NATIONAL PRESENTATIONS

- (1) **Costa, J. H. C.** 2023. “Can technology help us improve welfare on dairy farms? Precision livestock farming and animal welfare: future trends and opportunities”. Webinar - Dairy Cattle Welfare Council (DCWC) Webinar Series. February 14, 2023.
- (2) **Costa, J. H. C.** 2023. “Technology for Housing and Managing Dairy Calves.” WEBINAR Dairy Technology Tuesdays. Cornell University. Online. February 28, 2023. <https://www.youtube.com/watch?v=3aZtQowexIM>
- (3) **Costa, J. H. C.** 2022. Setting up the next generation: raising calves to go above and beyond (Invited Talk). Alltech Dairy School. Green Bay, WI, USA, December 1, 2022.
- (4) **Costa, J. H. C.** 2022. “Raising dairy calves for modern dairy farm systems.” Webinar: Raising and Managing Cows for Automated Milking Systems. Cornell Cooperative Extension - Cornell University. Online. November 16, 2022.
- (5) **Costa, J. H. C.** 2022. Precision dairy technologies for calves and heifers: On-farm management applications and individualizing nutrition, (Invited Talk). 2022 Meeting of the Northeast Section of ASAS and Branch of ADSA. Syracuse, NY, USA, October 21-22, 2022.

- (6) **Costa, J. H. C.** 2022. Calf behavior and performance related to milk feeding and weaning strategies: Are we forgetting about the calf? (Invited Talk). Advanced Dairy Nutrition and Management Shortcourse. Ithaca, NY, USA, June 6-9, 2022.
- (7) **Costa, J. H. C.** 2022. Calf behavior and performance related to milk feeding and weaning strategies: Are we forgetting about the calf? (Invited Talk). Advanced Dairy Nutrition and Management Shortcourse. Ithaca, NY, USA, June 6-9, 2022.
- (8) **Costa, J. H. C.** 2022. Impact of positive reinforcement practices on calves and heifers on future behavior (Invited Talk). High Plains Dairy Conference. Amarillo, TX, USA, March 1-2, 2022.
- (9) **Costa, J. H. C.** 2021. Precision livestock and animal welfare: the connection. Michigan State Animal Science Seminar. Lansing, MI, USA (Virtual), Feb 9, 2021.
- (10) **Costa, J. H. C.** 2020. "Calf Care with Dr. Joao Costa and the North Country Regional Ag Team." CCE North Country Regional Ag Team. Cornell University. Online. June 3, 2020.
<https://www.youtube.com/watch?v=qyXHLODCzEI&t=12s>
- (11) **Costa, J. H. C.** 2020. Dairy Cattle Welfare: Food Animal Track. 2020 Midwest Veterinary Conference (MVC). Columbus, OH, USA. February 20-23, 2020
- (12) **Costa, J. H. C.** 2019. Dairy calf and heifer management: new insights. 55th Florida Dairy Production Conference. Gainesville, FL, USA. September 18, 2019.
- (13) **Costa, J. H. C.** 2019. Precision dairy cattle welfare: use of technology for individual measures, record keeping and early disease detection. 2019 ASAS-CSAS Annual Meeting & Trade Show. Austin, TX, USA. July 10, 2019
- (14) **Costa, J. H. C.** 2019. Using precision dairy tools to manage youngstock and dairy cattle: options and practical tools. 2019 ASAS-CSAS Annual Meeting & Trade Show. Austin, TX, USA. July 10, 2019
- (15) **Costa, J. H. C.** 2019. The use of precision technologies to monitor, selectively treat, and manage nutrition of dairy calves. 2019 ADSA Annual Meeting. Cincinnati, OH, USA. June 25, 2019
- (16) Miller-Cushon, E., **Costa, J. H. C.** 2019. Research on group housing of calves. 2019 Dairy Cattle Welfare Symposium. Orlando, FL, USA. May 29, 2019
- (17) **Costa, J. H. C.** 2019. The success of a dairy calf starts at birth: nutrition and management of the dairy heifer (2 sessions). 2019 Central Plains Dairy Expo. Sioux Falls, SD, USA. March 27, 2019

- (18) **Costa, J. H. C.** 2019. Sub-acute Ruminant Acidosis: Impact on Rumen Health (2 sessions). 2019 Central Plains Dairy Expo. Sioux Falls, SD, USA. March 27, 2019
- (19) **Costa, J. H. C.** 2018. “Key Points in Calf Management-Early Life Disease and Future Implications”. Kentucky Dairy Partners Annual Meeting. Bowling Green, KY, USA. February 15, 2018
- (20) **Costa, J. H. C.** 2018. “Moving forward with group housing of dairy calves: What you need to know and important considerations”. Webinar - Dairy Cattle Welfare Council (DCWC) Webinar Series. March 14, 2018
- (21) **Costa, J. H. C.** 2017. MYTH: “What doesn’t kill you makes you stronger”: early life performance and future implications. 50TH American Association of Bovine Practitioners (AABP) Conference. Omaha, NE, USA. September 16, 2017
- (22) **Costa, J. H. C.** 2017. MYTH: “Calves forgive and forget”: Group housing of dairy calves: effects on performance, health, behavior and cognition. 50TH American Association of Bovine Practitioners (AABP) Conference. Omaha, NE, USA. September 16, 2017

5.2. ONLINE COURSES

- (1) *Pecuária Leiteira de Precisão: Escutando as vacas (Precision Dairy Farming: listening the cows)* (Online based course). (21 videos, Total of 145 minutes). April, 2019. Educapoint LTD.
- (2) *Sistemas coletivos para a criação de bezerras (Group housing of dairy calves)* (Online based course). (13 videos, Total of 106 minutes). May, 2019. Educapoint LTD.
- (3) *Atualidades no manejo de bezerras (Latest information on housing and management of dairy calves)* (Online based course). (13 videos, Total of 95 minutes). October, 2018. Educapoint LTD.

5.3. OUTREACH PRESENTATIONS/ACTIVITIES

- (1) Dare to Dairy, Instructor - 2017, 2018, 2019
Event targeted at KY 4-H/FFA youth to present basic dairy and dairy industry information.
- (2) Curiosity Fair, Dairy Science program booth coordinator and presenter – 2019, 2021
Event targeted at the general public and other academics to present the research activities of the university.
- (3) Teen Conference, Presenter - 2019
Event targeted at 4-H youth to present the research activities of the dairy science program and other relevant information about the dairy industry.

- (4) FreeWalk Scientific Network Tour, organizer and chairman - June 2019
Event targeted at members of the EU2020 FreeWalk Scientific Network to present the research activities of the UK dairy science program and three additional compost-bedded pack barn dairies in KY. Researchers from nine countries attended the 2-day event.
- (5) Brazilian Dairy farmers and Consultant Alltech Tour- organizer and chairman - May 2019
Dairy farm tour targeted at 18 dairy farmers, animal nutritionists, researchers and member of the Alltech support team from Brazil to present the research activities at the UK dairy science program and an additional eight dairy farms in three states.
- (6) Castrolanda Coop. Young Dairy Producers USA Tour- organizer and chairman - May 2019
Dairy farm tour target at eight dairy farmers, animal nutritionists, and member of the managerial team of the Castrolanda Dairy Co-op to present the research activities at the UK dairy science program and another five dairy farms in three states.
- (7) Training field technicians to understand calf lung consolidation. Cantor, M.C., and **J.H.C. Costa**. Lead instructor and lead organizer. August 2020.
Event targeted at members of the industry to present the research activities of the UK dairy science program and to train field technicians to understand calf lung consolidation utilizing ultrasonography.

6. TEACHING / EDUCATIONAL ACTIVITIES

Since my appointment as Faculty in July 2017 at the University of Kentucky and since 2023 at the University of Vermont, I have been a contributor to the teaching mission of the institutions. To date, I have been responsible for 29 different classes and a total of 56 credit hours. I have also demonstrated a commitment to undergraduate students through my service as the Dairy Club Advisor, Co-Coach of the Animal Welfare Judging Team, and as a mentor for undergraduate research projects. Additionally, over the past two years, I have participated in a myriad of teaching activities with other universities around the world.

Table 10. Summary of Courses Taught

Semester	Course	Credit Hours	Enrollment	Level
Fall 2017	Advanced Dairy Mgmt. Systems (ASC 333-010)	2	7	Undergraduate
Fall 2017	Dairy Science (ASC 420G)	3	40	Undergraduate
Fall 2017	Dairy Scientific Journal Rev (ASC 333-008)	1	5	Undergraduate
Fall 2017	Dairy Systems Research (ASC 333-009)	1	8	Undergraduate
Fall 2017	Sp Prob Repro Phys: Dairy Science Research (ASC 783-001)	1 or 2	12	Graduate

Spring 2018	Animal Production Principles – ASC 382	3	30	Undergraduate
Spring 2018	Dairy Scientific Journ Rev – ASC 333-008	1	2	Undergraduate
Spring 2018	Interpreting Cow Signals – ASC333-007	1	13	Undergraduate
Spring 2018	Research Experience in Biology – BIO 199-087	2	8	Undergraduate
Spring 2018	Special Course: Dairy Reproduction Mgmt - Gen 300	2	2	Undergraduate
Summer 2018	Study Abroad: Dairy in the United Kingdom – ASC 333-001	1	11	Undergraduate
Fall 2018	Sp Prob Repro Phys: Dairy Science Research – ASC 783-001	2	4	Graduate
Fall 2018	Dairy Science – ASC 420G	3	27	Undergraduate
Spring 2019	Animal Production Principles – ASC 382	3	49	Undergraduate
Spring 2019	Interpreting Cow Signals – ASC 333-008	1	12	Undergraduate
Spring 2019	Research Experience in Biology – BIO 199-087	2	6	Undergraduate
Spring 2019	Sp Prob Repro Phys: Dairy Science Research – ASC 783-001	3	1	Graduate
Fall 2019	Adv Tops Ansc: Animal Behavior & Welfare – ASC 778	3	4	Graduate
Fall 2019	Dairy Science – ASC 420G	3	34	Undergraduate
Spring 2020	Interpreting Cow Signals – ASC 333-009	1	2	Undergraduate
Spring 2020	Research Experience in Biology – BIO 199-087	2	9	Undergraduate
Fall 2020	Dairy Science – ASC 420G	3	33	Undergraduate
Spring 2021	Interpreting Cow Signals – ASC 333-010	1	4	Undergraduate
Spring 2021	Research Experience in Biology – BIO 199-087	2	9	Undergraduate
Spring 2022	Interpreting Cow Signals – ASC 333-011	1	4	Undergraduate
Spring 2022	Research Experience in Biology – BIO 199-087	2	6	Undergraduate
Fall 2021	Dairy Science – ASC 420G	3	32	Undergraduate
Fall 2021	Animal Science Seminar – ASC 777	1	2	Graduate
Fall 2022	Adv Tops Ansc: Animal Behavior & Welfare – ASC 778	3	3	Graduate

Fall 2022	Animal Science Seminar – ASC 777	1	2	Graduate
Fall 2022	Dairy Science – ASC 420G	3	28	Undergraduate
Total		56	409	

Table 11. Summary of Teacher Course Evaluations (TCEs) from 2017 to 2022.

Semester	Course	Instructor Score	Dept./ College Avg. Instructor Score	Course Score	Dept./ College Avg. Course Score
Fall 2017	Dairy Science (ASC 420G)	N/A	N/A	4.0	3.1/3.1
Fall 2018	Dairy Science (ASC 420G)	4.5	4.4/4.4	4.7	4.4/4.3
Fall 2019	Dairy Science (ASC 420G)	4.1	4.3/4.3	4.0	4.3/4.3
Fall 2020	Dairy Science (ASC 420G)	4.3	4.5/4.4	4.17	4.3/4.2
Spring 2018	Animal Production Principles (ASC 382)	4.2	4.3/4.4	3.8	4.2/4.2
Spring 2019	Animal Production Principles (ASC 382)	3.3	4.2/4.5	2.7	4.1/4.3
Spring 2020	Research Experience in Biology (BI0199-087)	4.2	4.4/4.2	3.6	4.2/4.1

6.1. COURSES TAUGHT

6.1.1. UNIVERSITY OF KENTUCKY, LEXINGTON, KY, USA

(1) Dairy Science – ASC 420G

Instructor: Joao H.C. Costa

Responsible for instruction, marking assignments, organizing, and assisting with class activities; 88% instructor responsibility.

3 credits, undergraduate course

Fall 2022 – 28 enrolled students

Fall 2021 – 32 enrolled students

Fall 2020 – 33 enrolled students

Fall 2019 – 34 enrolled students

Fall 2018 – 27 enrolled students

Fall 2017 – 40 enrolled students

(2) Animal Science Seminar – ASC 771

Instructors: Kyle McLeod and Joao H.C. Costa

Responsible for course development, instruction, marking assignments, organizing, and assisting with class activities; 35% instructor responsibility.

1 credit, graduate course

Fall 2021 – 2 enrolled students

Fall 2022 – 2 enrolled students

(3) Advanced Topics in ANSCI: Animal Behavior and Welfare – ASC 777

Instructor: Joao H.C. Costa

Responsible for developing the class, instruction, marking assignments, organizing, and assisting with class activities; 100% instructor responsibility.

3 credits, graduate course

Fall 2021 – 3 enrolled students

Fall 2019 – 4 enrolled students

(4) Animal Production Principles – ASC 382

Instructor: Joao H.C. Costa

Responsible for instruction, marking assignments, organizing and assisting with class activities; 75% instructor responsibility.

3 credits, undergraduate course

Spring 2019 – 49 enrolled students

Spring 2018 – 30 enrolled students

(5) Research Experience in Biology – BIO 199-087 (Precision Technology and Animal Behavior in Dairy Cattle Production)

Instructor: Joao H.C. Costa

Responsible for planning, research support, instruction, marking assignments, organizing and class activities; 100% instructor responsibility.

2 credits, undergraduate course

Spring 2022 – 6 enrolled students

Spring 2021 – 9 enrolled students
Spring 2020 – 9 enrolled students
Spring 2019 – 6 enrolled students (4 non-UK students)
Spring 2018 – 8 enrolled students

(6) Special Problems in Reproductive Physiology: Dairy Science Research – ASC 783-001

Instructor: Joao H.C. Costa
Responsible for organizing, instruction, and marking assignments; 100% instructor responsibility.
2 credits, graduate course
Spring 2019 – 1 enrolled student
Fall 2018 – 4 enrolled students
Fall 2017 – 12 enrolled students

(7) Interpreting Cow Signals – ASC 333-007 (Online Course)

Instructor: Joao H.C. Costa
Responsible for instruction, marking assignments, organizing and assisting with class activities; 100% instructor responsibility.
1 credit, undergraduate course
Spring 2022 – 4 enrolled students
Spring 2021 – 4 enrolled students
Spring 2020 – 2 enrolled students
Spring 2019 – 12 enrolled students
Spring 2018 – 13 enrolled students

(8) Study Abroad: Dairy in the United Kingdom – ASC 333-001

Instructor: Joao H.C. Costa
Responsible for instruction, marking assignments, organizing and coordinating farm and university visits within the United Kingdom; 100% instructor responsibility.
1 credit, undergraduate course
Summer 2018 – 4 enrolled students (plus 7 special attendees)

(9) Special Course: Dairy Reproduction Management – GEN 300-012

Instructor: Joao H.C. Costa
Responsible for organizing, instruction, and marking assignments; 100% instructor responsibility.
1 credit, undergraduate course
Spring 2018 – 2 enrolled students

(10) Dairy Systems Research – ASC 333-009

Instructor: Joao H.C. Costa
Responsible for instruction, marking assignments, organizing and assisting with class activities; 100% instructor responsibility.
1 credit, undergraduate course
Fall 2017 – 8 enrolled students

- (11) Dairy Scientific Journal Review – ASC 333-008
Instructor: Joao H.C. Costa
Responsible for organizing, instruction, and marking assignments; 100% instructor responsibility.
1 credit, undergraduate course
Fall 2017 – 5 enrolled students
Spring 2018 – 2 enrolled students
- (12) Advanced Dairy Management Systems – ASC 333-010
Instructor: Joao H.C. Costa
Responsible for organizing, instruction, and marking assignments; 100% instructor responsibility.
2 credits, undergraduate course
Fall 2017 – 7 enrolled students

6.1.2. FEDERAL UNIVERSITY OF VIÇOSA, VIÇOSA, MG, BRASIL

- (1) Precision Dairy Technologies (“Pecuária de Precisão”) – ZOO 795
Instructors: Joao H.C. Costa and Polyana Rotta
Responsible for coordination, instruction, marking assignments, and organizing; 75% instructor responsibility.
3 credits, Graduate course
Spring 2021 – 21 enrolled students

6.1.2. UNIVERSITY OF SAO PAULO -ESALQ, PIRACICABA, SP, BRASIL

- (1) Special Topics in Nutrition, Metabolism and Welfare of Dairy – LZT 5874
Instructors: Joao H.C. Costa and Carla Bittar
Responsible for coordination, instruction, marking assignments, and organizing; 50% instructor responsibility.
3 credits, Graduate course
Fall 2021 – 18 enrolled students

6.1.2. INSTITUTO DE ZOOTECNIA -IZ, RIBEIRAO PRETO, SP, BRASIL

- (1) Special Topics in Animal Behavior and Welfare– LZT 5874
Instructors: Joao H.C. Costa, Marcia Saladini Vieira Salles, and Lenira El Faro Zadra
Responsible for coordination, instruction, marking assignments, and organizing; 75% instructor responsibility.
3 credits, Graduate course
Spring 2023 – 13 enrolled students

6.2. TEACHING ASSISTANTSHIPS AND OTHER TEACHING ACTIVITIES PRIOR TO FACULTY POSITION

6.2.1. UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER, BC, CANADA

- (1) Graduate Teaching Assistant – Animals and Society – APBI 314
Instructors: David Fraser, Ph.D. and Marina von Keyserlingk, Ph.D.
Responsible for marking assignments, organizing and conducting field trips,
and assisting with class activities.
Fall 2015 and Fall 2014
- (2) Graduate Teaching Assistant – Research Methods in Applied Animal Biology –
APBI 398
Instructor: Marina von Keyserlingk, Ph.D.
Responsible for co-instructing the class (lead instructor in 5 classes),
organizing and conducting class activities and discussions, and
supervising the students on their final research projects.
Fall 2015
- (3) Graduate Teaching Assistant – Applied Animal Behavior – APBI 415
Instructor: Kristen Walker, Ph.D.
Responsible for marking assignments, assisting with class activities, and
supervising the students on their final research projects.
Spring 2015

6.2.2. FEDERAL UNIVERSITY OF SANTA CATARINA, FLORIANOPOLIS, SC, BRAZIL

- (1) Graduate Teaching Assistant – Dairy and Beef Cattle Production – ZOT 5809
Instructor: Luiz Carlos Pinheiro Machado Filho, Ph.D.
Responsible for teaching 2 classes, marking assignments, assisting with class
activities, and supervising students on their final grazing project.
Spring-Fall 2010
- (2) Undergraduate Teaching Assistant – Dairy and Beef Cattle Production – ZOT
5809
Instructor: Luiz Carlos Pinheiro Machado Filho, Ph.D.
Responsible for teaching 2 classes, marking assignments, assisting with class
activities, and supervising students on their final grazing project.
Spring-Fall 2008
- (3) Undergraduate Teaching Assistant – Ethology and Bioclimatology - ZOT 5403
Instructor: Maria José Hötzel, Ph.D.
Responsible for marking assignments and assisting with class activities.
Fall 2007

6.3. OTHER INSTRUCTIONAL ACTIVITIES

- (1) Facilitator – SimHerd Project – University of British Columbia (UBC), Vancouver, BC, Canada
Coordinator: Marina von Keyserlingk, Ph.D.
Responsible for organizing and co-instructing workshops to teach local dairy farmers tools for making on farm decisions.
Spring 2015
- (2) Intensive Grazing Management Workshop Instructor – Federal University of Santa Catarina (UFSC), Florianopolis, SC, Brazil
Coordinator: Luiz Carlos Pinheiro Machado Filho, Ph.D.
Responsible for co-instructing workshops and development of rotational grazing projects in partnership with the students.
Years of 2008-2012

6.4. COURSES GUEST LECTURED

- (1) Dairy calf nutrition and management (2 classes: 16 h). March 2023. Graduate Course in Dairy Cattle Nutrition. CESURG, Marau, Brazil.
- (2) Dairy cattle management and welfare (1 class). December 2022. Applied Animal behaviour and Welfare. University of Calgary.
- (3) Dairy calf management and welfare (1 class). November 2022. Dairy Cattle Nutrition. University of Guelph.
- (4) Dairy calf management: precision technology use and welfare (1 class). November 2022. Dairy Cattle Management – graduate course. University of Sao Paulo - ESALq.
- (5) Dairy cattle management and welfare (1 class). October 2022. Applied Animal behavior. Purdue University.
- (6) Dairy calf management and welfare (1 class). November 2021. Dairy Cattle Nutrition. University of Guelph.
- (7) Dairy calf and heifer management (2 classes). March 2021. Dairy Cattle Management and Production. University of Guelph - Ridgetown.
- (8) Dairy calf management and welfare (1 class). November 2020. Dairy Cattle Nutrition. University of Guelph.
- (9) Introduction to dairy cattle management (3 lab sections). October, 2019. ASC 101 – Domestic Animal Biology. Department of Animal Science UKY.

- (10) Introduction to animal welfare and consumer perception (1 class). September 2018. EQM 300-003 – Applied Animal Behavior and Welfare. Department of Animal Science UKY.
- (11) Ethics and history of animal welfare science (1 class). September 2018. EQM 300-003 – Applied Animal Behavior and Welfare. Department of Animal Science UKY.
- (12) Using knowledge of social behavior in commercial animal agriculture (1 class). October 2017. EQM 300-003 – Applied Animal Behavior and Welfare. Department of Animal Science UKY.
- (13) Introduction to dairy cattle management (3 lab sections). October 2017. ASC 101 – Domestic Animal Biology. Department of Animal Science UKY.

6.5. CASE SCENARIOS CREATED

- (1) Proudfoot, K., Knauer, W., Cantor, M.C., and **Costa, J.H.C.** Case scenario: Calf pair housing case for veterinary students. The Ohio State University. October 2019.
- (2) **Costa, J.H.C.**, Knauer, W., Cantor, M.C., Amendola, L., and Proudfoot, K. Farm Animal Welfare Cases for Veterinary Students. University of Prince Edward Island. November 2021.

6.6. STUDENT ACTIVITIES

- (1) Faculty Advisor, Dairy Club at the University of Kentucky (November 2017-March 2023).

As a faculty advisor of the Dairy Club, I am responsible for overseeing the activities of the club and advising the students in the activities that are performed throughout the year. I also help with the organization of and presentations for the ADSA regional and national meetings. The UK Dairy Club has been recognized with awards to the chapter, in both individual and chapter competitions, every year since I became the advisor.

2021/2022: 15 undergraduate student members
2020/2021: 33 undergraduate student members
2019/2020: 19 undergraduate student members
2018/2019: 23 undergraduate student members

- (2) Faculty Coach/Co-Coach, American Veterinarian Medical Association (AVMA) Animal Welfare Judging Team, University of Kentucky (2017-2023)

As a Faculty Coach for the AVMA Animal Welfare Judging competition, I was responsible for helping guide the students to find information, organize materials, and prepare for the judging competition. The Animal Welfare Judging and Assessment Contest (AWJAC) provides a unique educational experience to undergraduate, graduate, and veterinary students while strengthening student vocabulary and reasoning skills. The competition teaches students to assess the welfare of animals in a variety of settings using science-based methods and reasoning. Students are given the opportunity to weigh evidence and present sound evaluations. While the assessment of various aspects of animal welfare can be objective and quantifiable, judgment decisions of where on the welfare continuum is considered acceptable, preferred, or unacceptable often comes down to ethics-based choices. The AWJAC teaches students to integrate science-based knowledge with ethical values for an interdisciplinary approach to problem solving. Our team has been very successful in the competitions since 2017, both individually and collectively. This has strengthened the position of the University of Kentucky as a school with a strong presence in animal welfare scientific world.

2022: 3 undergraduate and 5 graduate student members

2021: 3 undergraduate and 5 graduate student members

*2019: 3 undergraduate and 4 graduate student members

*2018: 3 undergraduate and 1 graduate student members

*2017: 3 undergraduate student members

*Co-Coach with Dr. Camie Heleski

- (3) University of Kentucky Graduate Activities Committee Member (August 2019 – March 2023)

6.7. TRAINING OF GRADUATE STUDENTS / POST-DOCTORAL SCHOLARS / VISITING SCIENTISTS

I have been the supervisor of a total of 8 completed M.S. students, 2 Ph.D. students, and 2 Post-doctoral fellows. Additionally, 2 visiting scholars and 10 international graduate student visitors have worked in my research laboratory. I am also currently supervising 5 graduate students (2 Ph.D., 3 M.S.), and 1 post-doctoral fellow. The success of my program is evident in the careers of my former students; I am proud to keep a record of 100% employment or continuation of studies for the graduate students that have finished our program. Also, in the last 4 years, I have supervised more than 30 undergraduate students in my laboratory between research assistants, thesis mentoring, and field support students. My mentoring of graduate students goes beyond my university, as I have been part of the Advisory Committee or the Thesis Examining Committee of students in 15 different Universities across the world.

Table 12. Summary of Graduate Student and Post-Doctoral Training at the University of Kentucky (2017-2023).

	Post-Doc	Ph.D.	M.S.	Total
Major Advisor - Current	1	2	3	6
Major Advisor - Completed	2	2	8	12
Co-Supervision-Current	0	2	1	3
Advisory Committee Member - Current	0	4	0	4
Advisory Committee Member - Completed	0	4	8	12
Thesis Examining Committee Member - Completed	0	3	10	13
Total	3	17	30	50

6.7.1. GRADUATE STUDENTS AS MAJOR ADVISOR**6.7.1.1 – Ph.D. Students**

- (1) Megan Woodrum Setser (2021–present)

Dissertation: *The Relationship Between Dairy Calf Personality with Health, Performance, and Precision Technology Measures of Feeding Behavior and Activity*
University of Kentucky

- (2) Gustavo Mazon (2019–present)
Dissertation: *Strategic Nutritional Interventions and Their Relationships to Performance, Feeding Behavior, and Rumen Development of Calves*
University of Kentucky
- (3) Emily Rice (2017–2023)
Dissertation: *Real-Time Location and Behavior Monitoring In Dairy Cattle and the Identification of Heat Stress-Related Behaviors with Precision Dairy Technologies*
University of Kentucky
- (4) Melissa Cantor (2017–2021)
Dissertation: *Predicting Tomorrow: Optimizing the Early Detection of Disease and Disease Recovery in Dairy Calves Using Precision Technologies* [<https://doi.org/10.13023/etd.2021.286>]
University of Kentucky

6.7.1.2. – M.S. Students

- (1) Joao Vitor Ribeiro Lovatti (2022–present)
Thesis: *Effects of rumen-protected lysine and methionine supplementation during the growing phase on Angus X Holstein steer calves: feeding behavior, ruminal development, microbiome diversity, gene expression, plasma metabolites, performance, and efficiency.*
University of Vermont
- (2) Ekatherine Lopez-Bondarchuk (2022–present)
Thesis: *Effects of feeding different colostrum sources on curd formation, IgG absorption, and abomasal emptying rate in neonatal calves.*
University of Vermont
- (3) Bradley Kelly (2022–present)
Thesis: *Sustainable Precision Dairy Farming: Bridging Animal Welfare and Stakeholder Concerns About the Use of Precision Dairy Technologies.*
University of Kentucky
- (4) Emily Michalski (2021–2023)
Thesis: *Effects of the Use of Palatability Enhancers and Yeast Derived Additives on Crossbred Calves Health and Performance.*
[<https://doi.org/10.13023/etd.2023.075>]
University of Kentucky
- (5) Megan Woodrum Setser (2019–2021)
Thesis: *Isolation Box Test (IBT) and Dairy Calf Personality Traits Relationship with Performance Through Weaning*
[<https://doi.org/10.13023/etd.2021.269>]

University of Kentucky

- (6) Mackenzie Cooper (2019–2020)
Non-thesis student
University of Kentucky

- (7) Anna Hawkins (2017–2019)
Thesis: *Evaluating Costs Associated with Management Decisions of Replacement Dairy Heifers and Their Impact on The Total Rearing Investment* [<https://doi.org/10.13023/etd.2019.400>]
University of Kentucky

- (8) Lori Grinter (2017– 2019)
Thesis: *Validation of an Automated Behavior Monitoring Collar, and Evaluation of Heat Stress on Lactating Dairy Cow Behavior with Access to a Free Choice Soaker* [<https://doi.org/10.13023/etd.2019.055>]
University of Kentucky

- (9) Gustavo Mazon (2016–2019)
Thesis: *Effects of Yeast-Derived Microbial Protein on Transition Dairy Cow Health and Performance* [<https://doi.org/10.13023/etd.2019.241>]
University of Kentucky

- (10) Carissa Truman (2017–2018)
Thesis: *Automated Body Condition Scoring: Progression Across Lactation and Its Association with Disease and Reproduction in Dairy Cattle* [<https://doi.org/10.13023/etd.2019.004>]
University of Kentucky

- (11) Jenna Guinn (2017–2018)
Thesis: *Comparing Dairy Farm Performance and Heat Stress Abatement Strategies in The United States Using Summer to Winter Ratios* [<https://doi.org/10.13023/ETD.2018.123>]
University of Kentucky

6.7.2 GRADUATE STUDENTS AS CO-ADVISOR

- (1) Julia Fernandes Aires – Ph.D. (2021–present)
Federal University of Pelotas – Brazil
Dissertation: *Precision Dairy Technologies: Monitoring Behavior and Performance of Dairy Calves.*

- (2) Julia de Paula Soares Valente – Ph.D. (2022–present)
Universidade Estadual Paulista Júlio de Mesquita Filho – Jaboticabal Campus– Brazil
Dissertation: *Study of Indirect Genetic Effects on Social Dominance in Nelore Cattle*

- (3) Mariana Benetti Figueiredo – M.S. (2023–present)
Instituto de Zootecnia de Sao Paulo, Ribeirao Preto – Brazil
Dissertation: *Feeding and Social Behavior of Dairy Calves supplemented with organic zinc and sodium butirate.*

6.7.3. GRADUATE STUDENT ADVISORY COMMITTEE MEMBER

6.7.3.1. Ph.D. Students

- (1) Luís Fernando Costa Garrido – Pontifical Catholic University of Paraná, Brazil (2022–present)
- (2) Lázaro Henrique da Silva – Federal University of Lavras, Brazil (2021 – present)
- (3) Kristen Edwards – University of Guelph, Canada (2021–present)
- (4) Thiago Nogueira Marins – University of Georgia, USA (2021–present)
- (5) Alberto Cabus – University of Guelph, Canada (2020–2023)
- (6) Leonardo Guedes da Luz – Universidade Federal de Pelotas, Brazil (2021–present)
- (7) Hanne Goetz – University of Guelph, Canada (2019–2022)
- (8) Bettie Sindi Kawonga – University of Kentucky (2018)

6.7.3.2. M.S. Students

- (1) Luís Fernando Costa Garrido – Pontifical Catholic University of Paraná, Brazil (2022)
- (2) Janelle Morrison – University of Guelph, Canada (2021)
- (3) Meredith Conboy – University of Guelph, Canada (2021)
- (4) Thiago Guedes da Luz – Universidade Federal de Santa Maria, Brazil (2020)
- (5) Tanya France – University of Kentucky (2020)
- (6) Giovanna Simão Slanzon – Universidade de São Paulo – ESALQ, Brazil (2019)
- (7) Katie Kelly – North Carolina State University (2019)
- (8) Maria Eduarda Reis – Universidade de São Paulo – ESALQ, Brazil (2019–2020)

6.7.4. INTERNATIONAL VISITING GRADUATE STUDENTS

- (1) Dr. Naghme Baghery – Ph.D. (2017– 2019)
University of Tehran, Iran
Dr. Baghery's (DVM) project was "Effects of wheat particle size as free-choice provision on growth performance and feeding behaviors of dairy calves".
- (2) Dr. Maria Eduarda Reis – M.S. (2019–2020)
University of Sao Paulo, Brazil
Dr. Reis' (DVM) project was "Evaluation of a green tea extract for association with apparent efficiency of absorption of colostrum replacer and neonatal vitality in dairy calves"
- (3) Sarah Schwenck – M.S. (2022–2023)
L'Institut Agro Rennes-Angers, France
Schwenck's project was "Comparison of immunoglobulin G concentrations, Brix percentage, and serum total protein in newborn calves feeding maternal colostrum and colostrum replacer during the first 3 days of life".
- (4) Juliana Bennetton – M.S. (2019–2020)
Federal University of Santa Catarina, Brazil
Bennetton's project was "Isolation box test (IBT) and dairy calf personality traits relationship with performance through weaning".
- (5) Benoit Bouilly – M.S. (2019)
L'Institut Agro Dijon, France)
Bouilly completed a 20-week internship (required for his M.S. in Engineering in Agronomy) targeted at learning dairy cattle management.
- (6) Adrien Lebreton – M.S. (2018–2019)
L'Institut Agro Rennes-Angers, France
Lebreton's project was "Introduction to pasture, dairy calves are calmer and graze sooner when grouped with old heifers".
- (7) Charlotte Pertuisel – M.S. (2018–2019)
AgroParisTech National Institute Of Technology For Life, Food And Environmental Sciences, France
Pertuisel's project was "Estimating body weight of dairy calves with a partial weight scale attached to an automated milk feeder".
- (8) Justine Alary – M.S. (2018)
L'Institut Agro Dijon, France
Alary completed a 20-week internship (required for her M.S. in Engineering in Agronomy) targeted at learning dairy cattle management.

- (9) Mathilde Campedelli – M.S. (2018)
L'Institut Agro Dijon, France
Campedelli completed a 20-week internship (required for his M.S. in Engineering in Agronomy) targeted at learning dairy calf health management and the use of precision livestock farming.
- (10) Clémence Dudouit – M.S. (2018)
L'Institut Agro Dijon, France
Dudouit's project was "Summer post-dip composition effects on milk quality and teat health".

6.7.5. GRADUATE STUDENT THESIS EXAMINING COMMITTEE MEMBER

6.7.5.1. Ph.D. Students

- (1) Milaine Poczynek – Universidade Federal do Paraná – UFPR, Brazil (2023)
- (2) Natalie Roadknight – University of Melbourne, Australia (2021)
- (3) Elise Shepley – McGill University, Canada (2019)

6.7.5.1. M.S. Students

- (1) Delane Ribas da Rosa – Universidade Federal do Rio Grande do Sul – UFRGS, Brazil (2023)
- (2) Patrícia Glombowsky – Universidade do Estado de Santa Catarina – UDESC, Brazil (2020)
- (3) Crystal Espinoza – The University of Sidney, Australia (2020)
- (4) Hannah Freeman – University of Auckland, New Zealand (2019)
- (5) Marcelo de Barros Abreu – Universidade Federal de Viçosa, Brazil (2019)
- (6) Milaine Poczynek – Universidade de São Paulo – ESALQ, Brazil (2019)
- (7) Amanda Lee – University of Kentucky (2018)
- (8) Marcos Donizete Silva – Universidade de São Paulo – ESALQ, Brazil (2018)
- (9) Bernardo Magalhães Martins – Universidade Federal de Viçosa, Brazil (2018)
- (10) Gleiciéle Mendes de Souza – Universidade Federal de Lavras, Brazil (2022)

6.7.6. POST-DOCTORAL SCHOLARS MENTORED

- (1) Jessica Marcela Pereira (2022–present)
- (2) Ivelisse Robles (2019–2020)
- (3) Magnus Campler (2018–2019)

6.7.7. VISITING SCHOLARS MENTORED

- (1) Dr. Bettie Sindi Kawonga – Malawi, Africa – Fulbright Visiting Scientist (2022–2022)
Dr. Kawonga's project is "Development of a Biological Treatment System for Reduced Odor, Emissions and Pathogen Indicator Organisms in Animal Housing Using Biochar and Bacteria".
- (2) Dr. Ricardo Alamino Figueiredo – EMBRAPA, Brazil (2018–2019)
Dr. Figueiredo's project was "Precision Farm Tools Applied to Management, Animal Production and Reproduction".
- (3) Ahmet Refik Önal – Namik Kemal University, Turkey (2018–2019)
Dr. Önal's project was "Use of Precision Technologies in The Prevention of Calf Losses".

6.8. UNDERGRADUATE STUDENT RESEARCH MENTORING

Throughout my career, I have devoted effort to providing research opportunities for undergraduate students. I have mentored a total of 41 undergraduates in my research laboratory. Of these, 20 completed research undergraduate credit under my supervision; three of the undergraduate projects resulted in peer-reviewed journal articles, and 9 of the students presented research results at scientific conferences.

6.8.1 UNDERGRADUATE STUDENTS MENTORED

*Student enrolled in ASC 395 – Undergraduate Research

+Student enrolled in EXP 396 – Experimental Education

^ Teaching Assistant – STEMCats Program Peer Mentor

¥Student completed a research project, including presentation of the results

6.8.2.1. University of Kentucky

- 1) Lianara Morciglio Matias (2022–2023)
- 2) * Matthew Irwin (2022–2023)
- 3) ^Rae H Cassio (2022)
- 4) *¥Cessna Langford (2021–2022)

- 5) Hayden Klemanski (2021–2022)
- 6) *[¥]Emily Michalski (2020–2021)
- 7) *[¥]Mackenzie Berry (2021–2022)
- 8) * Emma Keilly (2021)
- 9) ^ Anika A. Yadav (2021)
- 10) *[¥]Abby Varney (2021–2022)
- 11) * Jesslyn Watson (2021)
- 12) * Lauren M. Adams (2021)
- 13) * Kennedy Edwards (2021)
- 14) *[¥]Jason Simmons (2020–2022)
- 15) * Madison Snedigar (2020 - 2021)
- 16) * Gabriela Bartnicki (2020)
- 17) *[¥]Rhianon Hall (2020–2022)
- 18) ^ Lindsay Long (2019 and 2020)
- 19) [¥]Giulia Gobbo Rodrigues – Brazil (2019–2020)
- 20) Mai Nguyen (2019)
- 21) * Brooke Mahoney (2019)
- 22) * Carla Elliot (2019)
- 23) * Casey Whitlock (2019)
- 24) Megan Tyrrell (2018–2019)
- 25) Hanna Stockley (2018)
- 26) * Griffin Tuftie (2018)
- 27) * Megan Tyrrell (2018)
- 28) [¥]Israel Mullins (2018)
- 29) Ainsley Kennedy (2018)
- 30) Madeline Penna (2018)
- 31) ^{+,^}Emma K. Higgins (2018)
- 32) [¥]Sarah E. Mac (2017–2018)
- 33) *[¥]Morgan Falk (2017–2018)
- 34) Devin Walter (2017–2018)

35) ¥ Megan Woodrum (2017–2019)

6.8.2.1. University of British Columbia, Canada

36) ¥ Nicola Adderley (2014–2017)

37) Alejandra Z. Perez (2014–2015)

38) ¥ Yasmine Yavari (2014–2015)

39) Emily Ng (2014)

40) Catherine Wong (2013–2014)

41) ¥ Venessa Wong (2013–2014)

6.8.2.2. Federal University of Santa Catarina, Brazil

42) ¥ Angélica Roslindo (2016)

6.8.3. STUDENT AWARDS UNDER MY SUPERVISION

Graduate student awards

2023 Megan Woodrum Setser
Advancing Animal Welfare Together Student Speaker, 2023, Merck Animal Health. Advancing Animal Welfare Together Research Showcase, Calgary, Alberta, Canada

2023 Megan Woodrum Setser
Dairy Cattle Welfare Symposium Student Speaker, 2023, *Measuring personality on-farm: Understanding individual variation and the needs of dairy calves*, Dairy Cattle Welfare Council, Fort Worth, TX, USA

2023 Gustavo Mazon
Outstanding overall presentation at the 2nd US Precision Livestock Farming Conference in Knoxville, TN

2022 Gustavo Mazon
Advancing Animal Welfare Together Student Speaker, 2022, Merck Animal Health. Advancing Animal Welfare Together Research Showcase, Des Moines, IA

2022 Gustavo Mazon
Scholarship Recipient (\$9,950 EUR)
Gustaf de Laval Fund - DeLaval

- 2022** Gustavo Mazon
Graduate Student Congress Travel Scholarship (\$500 USD)
University of Kentucky, Graduate Student Congress (GSC)
- 2022** Megan Woodrum Setser
Third place, AFSGA Poster Symposium, PhD Division
University of Kentucky Department of Animal and Food Sciences
- 2021** Megan Woodrum Setser
AFS Outstanding M.S. Graduate Student Award
University of Kentucky Department of Animal and Food Sciences
- 2021** UKY Graduate Student Team
Third Place, Animal Welfare Judging Competition – Graduate Student Team
Division
American Veterinarian Medical Association
- 2019** UKY Graduate Student Team
Third Place, Animal Welfare Judging Competition – Graduate Student Team
Division
American Veterinarian Medical Association
- 2018** Gustavo Mazon
Second Place, Three Minute Thesis Competition
University of Kentucky College of Agriculture, Food and Environment
- 2018** Gustavo Mazon
Scholarship recipient (\$5,000 USD)
National Milk Producers Federation
- 2018** Gustavo Mazon
First Place, Three Minute Thesis Competition – Graduate Student Division
American Dairy Science Association
- 2018** Gustavo Mazon
Second Place, Dairy Production Oral Competition
Southern Branch American Dairy Science Association
- 2018** Gustavo Mazon
Third Place, Oral Presentation – M.S. Division
Tri-State Dairy Nutrition Conference
- 2018** Lori Grinter
Second Place, Oral Presentation – M.S. Division
Tri-State Dairy Nutrition Conference

- 2018** Melissa Cantor
Third Place, Poster Symposium Competition – Ph.D. Division
University of Kentucky Department of Animal and Food Sciences Graduate
Student Association
- 2018** Melissa Cantor
First Place, 3 Minute Thesis Competition and People’s Choice Award
University of Kentucky Department of Animal and Food Sciences Graduate
Student Association
- 2018** Melissa Cantor
Third Place, 3 Minute Thesis Competition and People’s Choice Award
University of Kentucky College of Agriculture, Food and Environment
- 2018** Melissa Cantor
First Place Individual, Intercollegiate Animal Welfare Judging Competition
Colorado State University
- 2017** Melissa Cantor
Second Place, 3 Minute Thesis Competition
University of Kentucky Department of Animal and Food Sciences Graduate
Student Association

Undergraduate student awards

- 2022** Cessna Lanford
Third place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
American Dairy Science Association
- 2022** Cessna Lanford
First place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
Southern Branch American Dairy Science Association
- 2022** Mackenzie Berry
Top Ten Finalist for Student Employee of the Year Award
University of Kentucky
- 2022** Mackenzie Berry
Undergraduate Research Activity Award
University of Kentucky, CAFE (\$1,000 USD)
- 2022** Mackenzie Berry
Second Place, Original Undergraduate Student Oral Competition – Student
Affiliation Division
Southern Branch American Dairy Science Association

- 2022** Cessna Langford
First Place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
Southern Branch American Dairy Science Association
- 2021** Mackenzie Berry
Undergraduate Research Activity Award
University of Kentucky, CAFE (\$899 USD)
- 2021** UKY Undergraduate Student Team
Fifth Place, Animal Welfare Judging Competition – Undergraduate Student
Team Division
American Veterinarian Medical Association
- 2021** Rhiannon Hall
Third Place, Original Undergraduate Student Oral Competition – Student
Affiliation Division
Regional American Dairy Science Association
- 2020** Laura Adams
Third Place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
Southern Branch American Dairy Science Association
- 2020** Laura Adams
Third Place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
American Dairy Science Association
- 2018** Sarah Mac
First Place, Original Research Undergraduate Student Oral Competition –
Student Affiliation Division
Southern Branch American Dairy Science Association
- 2018** Sarah Mac
Second Place, Original Research Undergraduate Student Oral Competition –
Student Affiliation Division
American Dairy Science Association
- 2018** Carrie Paige Cecil
First Place, Dairy Foods Undergraduate Student Oral Competition – Student
Affiliation Division
Southern Branch American Dairy Science Association
- 2018** Carrie Paige Cecil
Second Place, Undergraduate Dairy Foods Oral Competition – Student
Affiliation Division
American Dairy Science Association

2018 Megan Woodrum
Third Place, Undergraduate Dairy Production Oral Competition – Student
Affiliation Division
American Dairy Science Association

7. PROFESSIONAL SERVICES

Service to the profession is something that I have taken seriously during my time as faculty. I have strived to create a reputation for delivering quality and consistent work when requested. This mentality has led me to many positions of leadership; these include serving in the Journal Management Committee (JMC) of the Journal of Dairy Sciences, service on 3 Editorial journal boards, receiving several invitations and re-invitations to serve on USDA competitive grant review panels, receiving an invitation to serve as one of the Advisory Council members for Foundation for Food and Agriculture Research (FFAR)- Advanced Animal Systems Challenge Area, being part of the 3 Multistates Research project, receiving invitations to many international ad-hoc review panels for competitive grants, and receiving a myriad of other invitations to similar activities. My broad background has led me to be a peer reviewer for 31 different scientific journals, with a total of over 130 reviews performed. Even as a young scientist, I have been privileged to be elected as Secretary-Treasurer for the Northeast Animal Society of Animal Science (ASAS)/American Dairy Science Association (ADSA) Board, and invited as a member of the board of the Dairy Cattle Welfare Council (DCWC), as a chair for the Kentucky Milk Handlers Advisory Board Meeting, and as the chair and main organizer for the Calf informal event at ADSA for the 3 years. This demonstrates the reputation that I have created as a national and international scientist in many fields.

7.1. JOURNAL EDITORIAL BOARD

- (1) Member of the Journal Management Committee – Journal of Dairy Sciences (2023–present).
- (2) Associate Editor – Frontiers in Animal Science, Precision Livestock Farming Section (2022–present).
- (3) Associate Editor – Journal of Applied Animal Welfare Science, Ruminant Section (2021–present).
- (4) Guest Associate Editor – Frontiers in Animal Science, Animal Nutrition Section for the topic of Dairy Calf Management and Nutrition (2021–present).

7.2. MANUSCRIPT REVIEWER

Table 13. Summary of Manuscripts Reviewed for Peer-Reviewed Scientific Journals (2015-present).

No.	Journal	Manuscripts Reviewed	Since	Impact Factor
1	Journal of Dairy Science	45	2015	4.03
2	Animal Welfare	10	2015	1.62
3	Journal of Animal Science	9	2015	3.15
4	PLoS One	9	2016	3.24
5	Animal	5	2017	3.24
6	Animals	4	2016	2.75
7	International Journal of Biometeorology	4	2018	3.78
8	Scientific Reports	4	2019	4.38
9	Canadian Journal of Animal Science	3	2018	1.01
10	Livestock Science	3	2018	1.94
11	Sensors	3	2019	3.57
12	Method X	3	2019	2.21
13	Agriculture	3	2020	2.92
14	Frontiers in Veterinary Medicine	3	2020	3.41
15	Applied Animal Behaviour Science	3	2018	2.44
16	Journal of Animal Physiology and Animal Nutrition	2	2015	2.13
17	British Food Journal	2	2017	3.47
18	Acta Veterinaria Scandinavica	2	2017	1.69
19	The Professional Animal Scientist	2	2018	N/A
20	PeerJ	2	2018	2.98
21	Journal of Applied Animal Research	2	2019	1.63
22	Journal of Thermal Biology	2	2019	2.90

No.	Journal	Manuscripts Reviewed	Since	Impact Factor
23	JAAWS Journal of Applied Animal Welfare Science	2	2019	1.44
24	Agronomy Research	1	2018	1.33
25	Animal Biotelemetry	1	2019	2.85
26	Information Processing in Agriculture	1	2019	6.40
27	Preventive Veterinary Medicine	1	2019	2.67
28	Veterinary Research Communications	1	2020	1.20
29	International Journal of Environmental Science and Technology	1	2020	2.86
30	Animal Biotechnology	1	2021	2.28
31	Italian Journal of Animal Science	1	2020	2.21
32	Domestic Animal Endocrinology	1	2022	2.48
Total		135		

7.3. AD-HOC REVIEWER / PANEL MEMBER SERVICES

- (1) Secretary-Treasurer for the Northeast Animal Society of Animal Science (ASAS)/American Dairy Science Association (ADSA) Board (2023 - Present)
- (2) Advisory Council – Foundation for Food and Agriculture Research, Advanced Animal Systems Challenge Area (2022 - Present)
- (3) Member – USDA SBIR Animal Production and Health Program (2020 and 2021)
- (4) Member – USDA Agriculture and Food Research Initiative, Welfare and Well-Being of Agricultural Animals Program (2020 and 2021)
- (5) Member –Multistate Research Project, NC1029: Applied Animal Behavior and Welfare " (2017 – Present)
- (6) Member, Secretary, and Chair –Multistate Research Project, NC2042, "Management Systems to Improve the Economic and Environmental Sustainability of Dairy Enterprises." (2018 – Present – Member; 2021 – 2022 – Secretary, 2022 – present - Chair)

- (7) Member –Multistate Research Project, NC1211, "Precision Management of Animals for Improved Care, Health, and Welfare of Livestock and Poultry." (2022 – Present)
- (8) Reviewer – 2022 Advanced Animal Systems (AAS)- Seeding Solutions, Foundation for Food and Agriculture Research, Reviewer (2022)
- (9) Reviewer – Israeli Ministry of Innovation, Science and Technology Research Grant Committee, External Reviewer Report (2022–present)
- (10) Reviewer – Alberta Milk's Research and Extension Grant Committee, External Reviewer Report [CRD-IRC] (2021–present)
- (11) Reviewer – Smart Agriculture and Food Digitalization and Automation Challenge Applications, External Reviewer Report [CRD-IRC] (2021–present)
- (12) Reviewer – Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Alliance, Tier I Research Program (2019–present)
- (13) Reviewer – AgResearch FY20 Strategic Science Investment Fund (SSIF), Science Excellence (2019–present)
- (14) Reviewer – NSERC External Reviewer Report [CRD-IRC] (2019–present)
- (15) Reviewer – Canadian Foundation for Innovation, John R. Evans Leaders Funds Proposal (Spring and Fall, 2018)
- (16) Reviewer – Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), University of Guelph Research Program (2018–present)

7.4. CONFERENCE/EVENT REVIEWER SERVICES

- (1) Abstract Reviewer – 2nd US Precision Livestock Farming Conference (2023)
- (2) Abstract Reviewer – European Conference on Precision Livestock Farming (2022)
- (3) Abstract Reviewer – International Precision Dairy Conference (2019–present)
- (4) Abstract Reviewer – American Dairy Science Association Annual Meeting (2018–present)
- (5) Abstract Reviewer – International Society for Applied Ethology Annual Meeting (2018–present)

Conference/Event Reviewer Services Prior to Joining University of Kentucky

- (1) Reviewer – Multidisciplinary Undergraduate Research Conference (2016)
- (2) Reviewer – The Land and Food Systems Graduate Student Conference (2016)

7.5. CONFERENCE/EVENT ORGANIZER SERVICES (prior to joining University of Kentucky)

- (1) Organizing Committee Member – 1st Zootecnia de Precisão: tecnologias para o Brasil (Precision dairy technology: technologies for Brazil), Ribeirão Preto, SP, Brazil (2023)
- (2) Organizing Committee Member – 47th Congress of the International Society for Applied Ethology, Florianópolis, SC, Brazil (2012)

7.6. PROFESSIONAL ORGANIZATION SERVICE

- (1) Conference Committee Member – Dairy Calf and Heifer Association (DCHA) (2019–2020)
- (2) Student Presentation and Abstract Committee Chair – Annual Meeting of the Dairy Cattle Welfare Council (DCWC) (2022, 2023)
- (3) Board Member – Dairy Cattle Welfare Council (DCWC) (2021)
- (4) Session Chair – American Dairy Science Association (ADSA) Annual Meeting (2019–2022)
- (5) Membership Committee Member – National Mastitis Council (NMC) (2019–2020)
- (6) Meeting Chair – Kentucky Milk Handlers Advisory Board Meeting (2018– present)
- (7) Membership Committee Chair – Dairy Cattle Welfare Council (DCWC) (2018)
- (8) Founding Member and Executive Committee (Treasurer) – Canada-Brazil Network (2012–2017)

7.7. PROFESSIONAL AFFILIATIONS

- (1) National Mastitis Council (2019–2022)
- (2) Dairy Cattle Welfare Council (2018–present)
- (3) Canadian Animal Science Association (2013–2020)
- (4) American Animal Science Association (2013–present)
- (5) Canadá-Brasil Network Member (2012–2017)
- (6) American Dairy Science Association (2009–present)
- (7) International Society for Applied Ethology (2009–present)