

Felipe “Phil” Cardoso, DVM, MS, PhD

Professor of Animal Sciences – University of Illinois Urbana-Champaign

Professional profile

Felipe “Phil” Cardoso is a Professor in the Department of Animal Sciences at the University of Illinois Urbana-Champaign and an internationally recognized expert in dairy cattle nutrition, health, reproduction, and management.

After obtaining his Degree in Veterinary Medicine from the Universidade Federal do Rio Grande do Sul (Brazil) in 2001, he worked as a veterinarian with dairy farms and producers for several year. He then obtained his Master’s degree in Veterinary Medicine from the Universidade Federal do Rio Grande do Sul (Brazil) in 2007 where he also worked as Research associate. Professor Cardoso subsequently moved to the United States where he obtained a PhD in Animal Sciences, specializing in dairy nutrition, from the University of Illinois Urbana-Champaign in 2012.

This combination of veterinary training, farm experience, and scientific expertise has shaped a career devoted to connecting research with practical solutions for the dairy industry. After completing his PhD, Professor Cardoso joined the University of Illinois as an Assistant Professor in 2012. He was promoted to Associate Professor in 2018 and to Professor in 2024.

Research activity

Professor Cardoso’s research focuses on the nutritional and metabolic management of dairy cattle, particularly during the transition from late pregnancy to early lactation. His work investigates how feeding strategies influence metabolism, immune function, reproductive efficiency, milk production, animal health, and herd longevity.

A major component of his research concerns the use of energy, amino acids, minerals, feed additives, and forage-management strategies to support cows during critical physiological periods. His studies have contributed to a better understanding of the relationships among nutrition, uterine health, inflammation, oxidative stress, fertility, and productive performance.

His research portfolio also includes the prevention and management of metabolic disorders, mycotoxin exposure, rumen health, silage quality, calf nutrition, and young-stock management. More recently, his work has expanded to include the dairy-cattle microbiome, digital phenotyping, heat-stress resilience, and machine-learning approaches for predicting changes in feed intake and animal health.

Publications and scientific impact

Professor Cardoso has authored or co-authored more than 90 peer-reviewed scientific articles in international journals, including the *Journal of Dairy Science*, *Journal of Animal Science*, *Theriogenology*, and other publications in animal science, veterinary medicine, nutrition, and reproductive biology.

He has also contributed chapters to books addressing dairy cattle fertility, transition-cow nutrition, feed additives, and nutritional and metabolic disorders in ruminants. In addition, he has produced 32 conference-proceedings articles and contributed to approximately 185 scientific abstracts presented at professional meetings.

His publication record reflects extensive collaboration with graduate students, postdoctoral researchers, veterinarians, animal scientists, and industry partners. Many of these publications originated from research conducted by students under his supervision or co-supervision, demonstrating the close connection between his scientific work and his commitment to training the next generation of dairy researchers.

Among his notable achievements, a study examining the effects of clay supplementation following an aflatoxin challenge was recognized as one of the 100 most highly cited papers published in the *Journal of Dairy Science* from 2016 onward. In 2023, another study, investigating how prepartum supplementation with rumen-protected lysine affects placental metabolism, was selected as an Editor's Choice article by the journal.

International experience and invited presentations

Professor Cardoso is a frequent invited speaker at scientific conferences, professional workshops, and industry events. He has delivered more than 130 invited presentations at national and international events, sharing his expertise with researchers, university students, veterinarians, nutritionists, dairy consultants, and producers.

His international activities have taken him across North and South America, Europe, Asia, and Australia. He has presented and taught in countries including Brazil, Canada, Colombia, Costa Rica, Ireland, Spain, Portugal, Italy, France, Ukraine, Turkey, China, South Korea, Australia, and New Zealand.

The subjects of his presentations have included transition-cow management, amino-acid nutrition, fertility, metabolic disorders, mycotoxins, silage quality, heat stress, herd longevity, and the practical application of research findings on commercial dairy farms.

Teaching and student mentorship

Teaching is a central part of Professor Cardoso's academic career. At the University of Illinois, he has taught courses covering introductory animal science, dairy production, dairy herd management, ruminant nutrition, diet formulation, entrepreneurship, infectious diseases, and advanced topics in animal nutrition.

His teaching activities integrate scientific principles with practical applications through dairy-farm visits, herd evaluations, case studies, diet-formulation exercises, and dairy-management competitions.

Professor Cardoso has contributed to the development of online educational opportunities, including asynchronous Coursera courses on dairy feeds, nutrition, and diet formulation. He also created the I-Dairy and I-Dairy Pro certificate programs for undergraduate and graduate students and led the development of the Dairy for Udder Success Certificate, which combines synchronous university courses with asynchronous Coursera courses.

Throughout his career, he has supervised and co-supervised numerous master's and doctoral students. His former students have continued their careers in academia, veterinary medicine, research, dairy nutrition, farm management, and the animal-health and feed industries.

His effectiveness as an educator has been repeatedly recognized by students and colleagues. He appeared on the University of Illinois List of Teachers Ranked as Excellent by Their Students across numerous academic years and courses.

Selected awards and distinctions

Professor Cardoso has received multiple awards recognizing his contributions to teaching, extension, research, and the dairy industry. Selected distinctions include:

- National Dairy Leadership Scholarship, 2010
- BASF Graduate Travel Award, 2011
- University of Illinois Graduate College Fellowship Award, 2012
- Gamma Sigma Delta Honor Society of Agriculture membership, 2012
- University of Illinois College Faculty Award for Excellence in Extension, 2016
- American Dairy Science Association Foundation Scholar Award in Dairy Production, 2016
- ADSA/ASAS Midwest Outstanding Young Extension Specialist Award, 2017
- North American Colleges and Teachers of Agriculture Educator Award, 2017
- Carlisle Teaching Award, University of Illinois Department of Animal Sciences, 2017
- John Clyde and Henrietta Downey Spitler Teaching Award, University of Illinois, 2019
- University of Illinois College Faculty Award for Excellence in Teaching, 2022
- American Society of Animal Science Midwest Outstanding Young Teacher Award, 2023
- University of Illinois Faculty Award for Excellence in Extension, 2024

Extension and knowledge transfer

A defining feature of Professor Cardoso's work is his ability to translate scientific findings into practical strategies for dairy farms. Through university extension activities, producer meetings, professional-development programs, farm consultations, and international workshops, he has helped connect academic research with the everyday needs of the dairy sector.

He founded the Dairy Focus educational initiative at the University of Illinois, which provides resources on dairy nutrition, reproduction, health, and management. The platform includes practical calculators, newsletters, videos, podcasts, technical articles, and multilingual materials used by farmers, veterinarians, nutritionists, researchers, and students in numerous countries.

These resources include tools for evaluating dairy efficiency and somatic cell counts, as well as educational content on transition-cow health, fertility, forage quality, and herd management. Collectively, the initiative's videos, podcasts, and online materials have reached an international professional audience.

Leadership and professional service

Professor Cardoso has held several elected leadership roles within the American Dairy Science Association. He served as Secretary and subsequently President of its Midwest Section, participated in the Journal of Dairy Science Management Committee, and later chaired that committee. He also served on the ADSA Discover Conference Steering Committee and co-chaired a conference dedicated to transition-cow biology and management.

Since 2023, he has served as Production Division Director on the American Dairy Science Association Board of Directors.

He also contributes to the scientific community as a reviewer for research programs and funding agencies, including the United States Department of Agriculture, the National Science Foundation, and agricultural research organizations in Canada and Argentina. Within the University of Illinois, he has participated in academic committees, faculty searches, curriculum development, mentoring initiatives, and departmental leadership activities.

Professor Cardoso's career is distinguished by the integration of scientific excellence, innovative teaching, student mentorship, and engagement with the dairy community. His work continues to advance knowledge of dairy-cattle nutrition while ensuring that research outcomes are translated into healthier animals, better-informed professionals, and more efficient and sustainable dairy-production systems.