

BIOGRAPHICAL SKETCH

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NAME: Valdés-Arciniega, Teresita de Jesús

eRA COMMONS USERNAME (credential, e.g., agency login): VALDESARCINI

POSITION TITLE: PhD student

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
Universidad Nacional Autónoma de México, México City, México City	DVM	11/2017	Veterinary Medicine and Zootechnics
University of Wisconsin Madison, Madison, Wisconsin	MS	05/2023	Bovine Reproduction
University of Wisconsin Madison, Madison, Wisconsin	PHD	09/2028	Neonatal Hypoxia-ischemia

A. Personal Statement

My academic journey in veterinary sciences at the National Autonomous University of Mexico (UNAM) significantly deepened my interest in reproductive hormone physiology. During my final year of veterinary school, I undertook a six-month research internship at Michigan State University under the mentorship of Dr. J. Richard Pursley, pioneer and expert in dairy cattle reproductive performance. This experience, where I observed the practical application of research to enhance dairy farm productivity, inspired me to pursue a career in research. Subsequently, under the guidance of Dr. Joao Paulo Martins at the University of Wisconsin-Madison, I investigated the effects of reproductive hormones on hypothalamic and pituitary responses. This research culminated in two lead-authored manuscripts and honed my skills in experimental design, data analysis, and scientific communication, while also enhancing my leadership and teamwork abilities. My master's training strengthened my research capabilities and inspired me to explore new horizons in neuroendocrinology. Currently, as a PhD student at the Cengiz Lab at the University of Wisconsin-Madison, I am engaged in research that focuses on sex-specific differences in neonatal hypoxia-ischemia outcomes and the TrkB-mediated neuroprotective pathway. This research aligns perfectly with my background in hormonal research and holds the potential to improve long-term neuroprotection and cognitive outcomes, translating into meaningful clinical applications. I am eager to contribute to the field of neuroendocrinology and advance our understanding of hypoxia-ischemia, ultimately improving outcomes for affected newborns.

B. Positions, Scientific Appointments and Honors**Positions and Scientific Appointments**

2023 -	PhD student, University of Wisconsin Madison, Madison, WI
2021 - 2023	MS student, University of Wisconsin Madison, Madison, WI
2019 - 2020	Research Intern, University of Wisconsin Madison, Madison, WI
2015 - 2016	Honorary Fellow, Michigan State University, East Lansing, MI

Honors

2021	Poster Presenter, 2021 ADSA annual meeting
2021	Poster Presenter, 2021 DCRC annual meeting
2020	Virtual Poster Presenter, 2020 ADSA annual meeting
2020	Virtual Poster Presenter, 2020 DCRC annual meeting

C. Contribution to Science

1. **Advancing Fertility by using Human Chorionic Gonadotropin (hCG) in Dairy Cattle:** At Dr. Joao Paulo Martins' laboratory at the University of Wisconsin-Madison, I conducted and collected experimental data for a research project aimed to assess the effect of administering hCG on different days of the estrous cycle on serum progesterone concentrations in embryo recipient dairy heifers. Additionally, I assisted and collaborated with two master's students of Dr. Paul Fricke on two separate studies focused on 1.) understanding the administration of hCG on ovarian physiology to enhance fertility in dairy cattle; 2.) evaluating the use of hCG at the time of embryo transfer of in vitro produced embryos in multiparous dairy cows. My contributions to these three studies were included in articles published in the Journal of Dairy Science and JDS Communications.
 - a. Hincapie N, Lauber MR, Valdes-Arciniega T, Martins JP, Carvalho PD, Faber R, Farruggio R, Fricke PM. Evaluation of treatment with human chorionic gonadotropin at transfer of in vitro produced beef embryos on reproductive outcomes in lactating multiparous Jersey cows after a synchronized ovulation. J Dairy Sci. 2024 Jul 19; PubMed PMID: 39033921.
 - b. El Azzi MS, Valdes-Arciniega T, Anta-Galvan E, Leão IMR, Sala RV, Fosado M, de Souza JC, Martins JPN. Effects of human chorionic gonadotropin on the last day of a 5-day CIDR Synch protocol and 5 days later on circulating progesterone concentrations and luteal area in Holstein heifers. JDS Commun. 2022 Sep;3(5):368-372. PubMed Central PMCID: PMC9623746.
 - c. Cabrera EM, Lauber MR, Valdes-Arciniega T, El Azzi MS, Martins JPN, Bilby TR, Fricke PM. Replacing the first gonadotropin-releasing hormone treatment in an Ovsynch protocol with human chorionic gonadotropin decreased pregnancies per artificial insemination in lactating dairy cows. J Dairy Sci. 2021 Jul;104(7):8290-8300. PubMed PMID: 33838886.
2. **Improving Fertility in Lactating Dairy Cows:** During my master's training under the guidance of Dr. Joao Paulo Martins, I directed and conducted two major projects which objectives were: 1) to determine the effect of gonadotropin-releasing hormone (GnRH) dosage used in a synchronization of ovulation program on the fertility of lactating dairy cows, and 2) to investigate the relationship between milk production and circulating progesterone concentrations on double ovulation in multiparous Holstein cows. As a result of this research, I authored two scientific manuscripts. One was accepted and published in the Journal of Dairy Science in 2023, and the second is currently under peer review at the same journal. Additionally, I contributed to a separate study conducted in Dr. Martins' laboratory that examined the effect of GnRH dosage used in a re-synchronization fertility program on the ovarian dynamics and pregnancy outcomes of dairy cattle.
 - a. Leão IMR, El Azzi MS, Anta-Galván E, Valdés-Arciniega T, Martins JPN. Effect of 200 µg of gonadorelin at the first gonadotropin-releasing hormone of the Resynch-25 on ovarian dynamics and fertility in lactating Holstein cows. J Dairy Sci. 2024 May;107(5):3319-3334. PubMed PMID: 38101731.
 - b. Valdés-Arciniega TJ, Leão IMR, Anta-Galván E, Cunha TO, El Azzi MS, Cook NB, Martins JPN. Effect of using 200 µg of gonadorelin at the first gonadotropin-releasing hormone of the breeding-Ovsynch on ovulatory response and pregnancies per artificial insemination in first-service lactating Holstein cows. J Dairy Sci. 2023 Dec;106(12):9718-9732. PubMed PMID: 37641336.
3. **Role of sex steroids and their receptors in neurotrophin mediated neuroprotection in developing brains:** In addressing the critical issue of neonatal hypoxic-ischemic (HI) injury, the research at Cengiz Lab has explored the sex-specific differences in susceptibility to HI, a phenomenon well-documented yet poorly understood. By integrating sex as biological variable into preclinical study designs, Dr. Cengiz has identified a tyrosine kinase B receptor (TrkB)-mediated neuroprotective pathway that can be therapeutically targeted to enhance both short and long-term neuroprotection following neonatal HI. Previous findings from our lab demonstrate that this TrkB-mediated neuroprotection, which is estrogen receptor alpha (ERα)-dependent, significantly improves long-term hippocampal learning and memory, with effects persisting into adulthood. Notably, treatment with 7,8-dihydroxyflavone (7,8-DHF), a TrkB agonist, has shown robust therapeutic efficacy in female neonatal mice, but not in males. My current project aims to further elucidate the role of the neonatal hormonal environment in regulating ERα-dependent TrkB-mediated neuroprotection, thereby advancing our understanding and potential therapeutic strategies for neonatal HI.