

CURRICULUM VITAE
NUCHARIN SONGSASEN

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Expertise as related to the proposed research

Physiology, Conservation Biology, Animal health and well-being

EDUCATION:

1982-1988 D.V.M., Kasetsart University, Thailand
1991-1993 M.Sc., University of Guelph, Canada
1993-1997 Ph.D., University of Guelph, Canada

APPOINTMENTS:

Professional Positions

1988-1999 Veterinary officer, Artificial Insemination Division, Department of Livestock Development, Thailand
1999-2000 Postdoctoral Researcher, Department of Biological Science, University of New Orleans, New Orleans, LA
2000 Research Associate 5, Department of Biological Science, University of New Orleans, New Orleans, LA
2001-2002 Assistant Professor, Research, Department of Biological Science, University of New Orleans, LA
2001-2002 Staff Scientist, Audubon Center for Research of Endangered Species, New Orleans, LA
2002-present Research Biologist, Smithsonian Conservation Biology Institute, Front Royal, VA
2004-2008 Adjunct Professor, Kasetsart University, Thailand
2006-present Affiliated Professor, George Mason University, Fairfax, VA
2009-present Adjunct Professor, University of Maryland, College Park, MD
2010-present Adjunct Professor, Cornell University, Ithaca, NY
2019-present Head, Center for Species Survival, Smithsonian Conservation Biology Institute, Front Royal, VA

RELEVANT PUBLICATIONS (from 115 peer-reviewed publications and 9 book chapters)

2025 Celedon JJ, Corder ML, McConnell M, **Songsasen N**, Nagashima JB. Proteome of seminal plasma and sperm associated with sperm survival following cryopreservation in the Red Wolf (*Canis rufus*). *Sci Rep.* 2025 Oct 29;15(1):37882. doi: 10.1038/s41598-025-21778-w. PMID: 41162585; PMCID: PMC12572227.

2025 Nagashima JB, Pukazhenthii B, **Songsasen N**. State of the art and application of gamete and reproductive tissue banking in wildlife conservation. *Cryobiology.* 2025 Dec;121:105333. doi: 10.1016/j.cryobiol.2025.105333. Epub 2025 Oct 15. PMID: 41100950.

2025 Marks B, Nagashima JB, Keefer CL, Songsasen N. Ovarian Stromal Cell-Conditioned Media, but Not Co-Culture, Improves Survival in Feline Follicles. *Animals (Basel).* 2025 May 24;15(11):1539. doi: 10.3390/ani15111539. PMID: 40509005; PMCID: PMC12153732.

2024 M, Muletz-Wolz CR, **Songsasen N**, Freeman EW. Kibble diet is associated with higher faecal glucocorticoid metabolite concentrations in zoo-managed red wolves (*Canis rufus*). *Conserv Physiol.* Feb 27;12(1):coae008. doi: 10.1093/conphys/coae008.

2023 Nagashima JB, Zenilman S, Raab A, Aranda-Espinoza H, **Songsasen N**. Comparative Tensile Properties and Collagen Patterns in Domestic Cat (*Felis catus*) and Dog (*Canis lupus familiaris*)

- Ovarian Cortical Tissues. *Bioengineering* (Basel). Nov 4;10(11):1285. doi: 10.3390/bioengineering10111285. PMID: 38002409; PMCID: PMC10669533.
- 2023 Brown, M. E., Olsen, G. H., Keefer, C. L., **Songsasen N.** Egg production and endocrine profiles of female whooping cranes (*Grus americana*) maintained ex situ are improved in naturalized enclosures. *Theriology Wild* 2. <https://doi.org/10.1016/j.therwi.2023.100034>
- 2023 Sosale, M.S., **Songsasen N.**, Ibiş, O., Edwards, C., Figueiró, H. V., Koepfli, K. P. The complete mitochondrial genome and phylogenetic characterization of two subpopulations of golden jackal (*Canis aureus cruesemanni* and *Canis aureus moreotica*). *Gene* Feb 26:147303. doi: 10.1016/j.gene.2023.147303.
- 2023 Leimgruber, P., **Songsasen N.**, Stabach, J. A., Horning, M. Reed D., Buk, T., Harwood, A., Layman, L., Mathews, C., Vance, M., Marinari, P., Helmick, K. E., Deaski, K. M., Ware, L. H., Jones, J. C., Laske, T. G., Moraes, R. N. Providing baseline data for conservation – Heart rate monitoring in captive scimitar-horned oryx. *Front Physiol Sec Physio-logging*. 14,| doi: 10.3389/fphys.2023.1079008
- 2021 Jones, M. K., Huff, T. B., Freeman, E. W., **Songsasen N.** Differential expression of urinary volatile organic compounds by sex, male reproductive status, pairing status in the maned wolf (*Chrysocyon brachyurus*). *PloS One* 16(8): e0256388.
- 2021 Moraes, R. N., Laske, T. G., Leimgruber, P., Stabach, J.A., Marinari, P. E., Horning, M. M., Laske, N. R., Rodriguez, J. V., Eye, G. N., Kordell, J. E., Gonzalez, M., Eyring, T., Lemons, C., Helmick, K. E., Delaski, K. M., Ware, L. H., Jones, J. C., **Songsasen, N.** Inside out: heart rate monitoring to advance the welfare and conservation of maned wolf (*Chrysocyon brachyurus*). *Conservation Physiology* 9(1):coab044 doi: 10.1093/conphys/coab044.
- 2020 Bragg, M., Freeman, E. W., Lim, H.C., **Songsasen, N.**, Multetz-Wolz, C. R. Gut microbiomes differ among dietary types and stool consistency in captive red wolf (*Canis rufus*). *Front Microbiol* Nov 10;11:590212. doi: 10.3389/fmicb.2020.590212. eCollection 2020.
- 2020 Nagashima, J. B., Ferraz, M. A. M. M., Kamen, S. H., **Songsasen, N.** Investigating media that support red wolf (*Canis rufus*) sperm viability and capacitation in vitro. *Reproduction and Fertility* 1:83-92.
- 2020 Ferraz M.A.M. M., J. B. Nagashima, B. Venzac, S. Le Gac, **N. Songsasen.** 3D printed mold leachates in PDMS microfluidic devices. *Scientific Reports* 10:994 doi: 10.1038/s41598-020-57816-y.
- 2020 Thongkittidilok C, N. Dorigguzzi, J. Nagashima, M. Brown, A. Chansaenroj, **N. Songsasen.** Cilostamide and forskolin maintain gap junction function of incubated dog follicles. *Theriogenology* 142:222-228.
- 2019 Nagashima J. B., A. J. Travis, **N. Songsasen.** The domestic dog embryo: In vitro fertilization, culture and transfer. *Methods in Molecular Biology*. 2006:247-267.
- 2019 Pereira L.M.C., M. D. Lopes, N. Songsasen. Effect of oxygen tension on in vitro viability and development of dog follicles enclosed within the ovarian cortex. *Reproduction in Domestic Animals*. Jun 1. doi: 10.1111/rda.13482.
- 2019 Thuwanut P., P. Comizzoli, K. Pruksananonda, K. Chatdarong, **N. Songsasen.** Activation of adenosine monophosphate-activated protein kiase (AMPK) enhances energy metabolism, motility, and fertilizing ability of cryopreserved spermatozoa in domestic cat model. *Journal of Assisted Reproduction Genetic* 36:1401-1412.
- 2019 Nagashima J. B., D. E. Wildt, A. J., Travis, **N. Songsasen.** Activin promotes growth and antral cavity expansion in the dog ovarian follicle. *Theriogenology* 129:168-177.

- 2018 Nagashima J. B., R. El Assal, **N. Songsasen**, U. Demirci. Evaluation of an ovary-on-a-chip in large mammalian models: species specificity and influence of follicle isolation status. *Journal of Tissue Engineering and Regenerative medicine*. 12: e1926-e1935. doi: 10.1002/term.2623
- 2017 **Songsasen N.**, J. Nagashima, C. Thongkittidilok. Endocrine and paracrine controls of canine follicular development and function. *Reproduction in Domestic Animals (Suppl 2)* 52:29-34.
- 2017 Thuwanut P, P. Comizzoli, D. E. Wildt, C. L. Keefer, **N. Songsasen**. Stem cell factor promotes in vitro ovarian follicle development in the domestic cat by upregulating c-kit mRNA expression and stimulating the phosphatidylinositol 3-kinase/AKT pathway. *Reproduction Fertility and Development* 29:1356-1368.

Synergistic Activities

- Coordinator: Maned Wolf Species Survival Plan (2015-present) and IUCN/SSC's Canid Specialist Group/Dhole working Group (2011-present)
- Reproductive Advisor: Maned Wolf Species Survival Plan (2003-present) and Canid Taxon Advisory Group (2007-present).
- Ad hoc reviewer for several scientific journals including *Theriogenology*, *Cryobiology*, *Animal Reproduction Sciences*, *Reproduction*, *Fertility and Development*, *Animal Conservation*, *Zygotes*, *Zoo Biology*, *Journal of Mammalogy*, *Biology of Reproduction*, *Molecular Reproduction and Development*, *Conservation Physiology*, *Journal of Applied Animal Research* and *Oryx*.
- Associate editor: *Cryobiology* journal (2022 – present).
- Editorial board member for *Theriogenology* (2005 to present), *Cryobiology* (2012-present) and Guest-Editor of the Special Issue on Cat Reproduction, *Theriogenology* (2006).