

BIOMEDICAL & VETERINARY SCIENCES

GRADUATE PROGRAM



ANNOUNCES

The Doctor of Philosophy Seminar and Examination of

Nadia T. Saklou, DVM
**"Equine Herpesvirus Type 1: Filling Gaps Toward
Improved Outbreak Management"**

Thursday, May 25th, 2023

9:00AM

Vet Med Classroom 102



Bio

Nadia is a large animal veterinarian with a passion for helping animals. Her career interests parallel her personal interests, which revolve around animals – horseback riding, hiking, traveling, kayaking, adopting animals and anything that she can do with her dog or horses. She enjoys these activities with her friends, her husband and kids.

Her clinical career started as a veterinary technician working with small animals, then equine both for private practices, throughout which she developed an interest in veterinary neurology and infectious disease. She began working as a wildlife technician for the USDA, which provided her first veterinary research experience. Throughout this time, she earned her bachelors in equine science and her doctorate of veterinary medicine from Colorado State University. During veterinary school, she continued her research endeavors with equine infectious disease and biosecurity projects. After veterinary school, she completed her first year as an equine veterinarian with a private practice internship in Salinas, California, followed by a residency in large animal internal medicine at Virginia-Maryland College of Veterinary Medicine. During her residency, she began her work for this PhD dissertation.

Funded by

American Quarter Horse Foundation
Virginia-Maryland College of Veterinary Medicine Veterinary Memorial Fund
Virginia Horse Industry Board
VMCVM Office of Research and Graduate Studies

Awards and Academic Achievements

- Best Recorded Presentation, Student Awards at AAVLD (LAMP EHV-1) 2021
- PHI ZETA Manuscript Competition Winner, Clinical Sciences VMCVM (EHV-1 Persistence) 2021
- First Place Student Award for Biosafety & Biosecurity Presentation at CRWAD (Misting Disinfectants) 2013
- Second Place Student Poster Presentation at CVMA (EHV-1) 2013
- First Place Student Award for Biosafety & Biosecurity Presentation at CRWAD (EHV-1) 2012

Lay Language Abstract

Horses can develop disease from a virus called Equine herpesvirus type 1 (EHV-1). Symptoms can vary from mild respiratory signs to the inability to rise leading to death or euthanasia. Horses transmit this virus to other nearby horses, however the virus also becomes dormant once a horse is infected, meaning the virus is not infective but is present within the animal. When the horse undergoes stress, such as during travel or competition, the virus can become active again, leading to the spread to other horses. This results in outbreaks, many of which are devastating to the equine industry. In order to minimize the risks of this virus spreading and causing disease, management is currently focused on minimizing the movement of horses that may have been exposed to the virus. There is little information regarding the number of horses that harbor the dormant virus and the current methods to detect the infective virus can take multiple days for results. These limit decision making during the management of an outbreak. Our work seeks to determine the number of horses in a region that harbor EHV-1 and also to test a new, efficient diagnostic method to identify the virus in samples from horses. Our findings showed a low number of horses in Virginia harbor dormant EHV-1 in the lymph nodes under their mandible, a common site of dormancy. Further, we found that our new method of detection was effective in identifying the virus in samples from nasal secretions from horses.

Publications

Peer Reviewed

Saklou NT, Pleasant S, Lahmers KK, Funk R. Prevalence of latent equine herpesvirus type 1 in submandibular lymph nodes of horses in Virginia. *Pathogens Special Issue: Respiratory Viruses of Equids. In Review for Publication*

Saklou NT, Lahmers, KK. LAMPore sequencing as a diagnostic tool for equine herpesvirus type 1. *Pathogens Special Issue: Respiratory Viruses of Equids. In preparation*

Saklou NT, Burgess BA, Ashton LV, Morley PS, Goehring LS. Environmental persistence of equid herpesvirus type-1. *Equine Vet J.* 2020 Jun 17. doi: 10.1111/evj.13313. Epub ahead of print. PMID: 32557765.

Saklou NT, Burgess BA, Ashton LV, Morley PS, Goehring LS. Environmental persistence of equid herpesvirus type-1. *Equine Vet J.* 2021;53:349–355. <https://doi.org/10.1111/evj.13313>

Hornig K, Burgess BA, **Saklou N**, Morley PS, Van Metre DC, Byers SR. Evaluation of activated hydrogen peroxide and peroxygen disinfectants as misting applications. *Journal of Veterinary Internal Medicine.* 2016 November; 30 (6): 1882-1886. doi: 10.1111/jvim.14576

Saklou NT, Burgess BA, Van Metre DC, Hornig K, Morley PS, Byers SR. Comparison of disinfectant efficacy when using high-volume directed mist application of accelerated hydrogen peroxide and peroxy monosulfate disinfectants in a large animal hospital. *Equine Veterinary Journal.* June 2015. DOI: 10.1111/evj.12476

Publications continued

Peer Reviewed

Barasona JA, Vercauteren KC, **Saklou N**, Gortazar C, Vicente J. Effectiveness of cattle operated bump gates and exclusion fences in preventing ungulate multi-host sanitary interaction. *Prev Vet Med.* 2013 Aug 1;111(1-2):42-50. doi: 10.1016/j.prevetmed.2013.03.009.

Nol P, Rhyan JC, Robbe-Austerman S, McCollum MP, Rigg TD, **Saklou NT**, Salman MD. The potential for transmission of BCG from orally vaccinated white-tailed deer (*Odocoileus virginianus*) to cattle (*Bos taurus*) through a contaminated environment: experimental findings. *PLoS One.* 2013;8(4):e60257. doi:10.1371/journal.pone.0060257.

Conference Proceedings and Abstracts:

Saklou NT, Burgess BA, Morley PS, Gold JR. Factors associated with long-term survival of geriatric horses in the U.S. Proceedings of the 95th Annual Conference of Research Workers in Animal Diseases, Chicago, IL, 2014. Abstract 38.

Saklou N, Burgess BA, Hornig K, Morley PS, Van Metre DC, Byers SR. Evaluation of activated hydrogen peroxide and peroxygen disinfectants as misting applications. Proceedings of the 94th Annual Conference of Research Workers in Animal Diseases, Chicago, IL, 2013. Abstract 38.

Saklou, NT, Burgess, BA, Morley, PS, Goehring, LS. Equine herpesvirus type 1 (EHV-1) in the environment: How long will it stay infective? Equine Veterinary Journal. British Equine Veterinary Association Congress 2013. Vol 45, Supplement 44, September 2013.

NT Saklou, B Burgess, PS Morley, LS Goehring. Environmental survival of equid herpesvirus type 1 (EHV-1). Proceedings of the 2013 ACVIM Forum, Seattle, WA, 2012, Abstract E-53.

NT Saklou, LV Ashton, LS Goehring. Environmental survival of Equid Herpesvirus -1. Proceedings of the 93rd Annual Conference of Research Workers in Animal Diseases, Chicago, IL, 2012. Abstract 26

Presentations

Saklou, NT. Equine Herpesvirus Type 1: Filling gaps toward improved outbreak management. Oral Presentation: RIP Seminar, Blacksburg, VA April 2023.

Saklou, NT. Testing Horse Boogers. Poster Presentation. Flip The Fair, Roanoke, VA, February 2022.

Saklou, NT, Lahmers, K., Burgess, BA. A novel diagnostic modality for identifying Equid Herpesvirus type-1. Video Oral Presentation: CRWAD, Chicago, IL, December 2021.

Saklou NT, Todd, M, Burgess BA, Lahmers K. Loop-mediated isothermal amplification and DNA sequencing for the detection and genotyping of equine herpesvirus type 1 in equine nasal secretions. Video Oral Presentation: AAVLD, Denver, CO, October 2021.

Saklou NT, Lahmers K, Pleasant P. Prevalence of EHV-1 in submandibular lymph nodes of Virginia horses. Video Poster Presentation: BMVS Research Symposium, Blacksburg, VA, March 2021.

NT Saklou, N Duggal, BA Burgess, T LeRoith, K Lahmers. Development of a stall-side sequence-based test for Equine Herpesvirus-1. Poster Presentation: BMVS Research Symposium, Blacksburg, VA, November 2019.

Saklou NT, Burgess BA, Morley PS, Gold JR. Factors associated with long-term survival of geriatric horses in the U.S. Oral Presentation: Conference of Research Workers in Animal Diseases (CRWAD), Chicago, IL, 2014.

Saklou N, Burgess BA, Hornig K, Morley PS, Van Metre DC, Byers SR. Evaluation of activated hydrogen peroxide and peroxygen disinfectants as misting applications. Poster Presentation: CVMBS Research Day, Fort Collins, CO, 25 January 2014.

Presentations continued

Saklou N, Burgess BA, Hornig K, Morley PS, Van Metre DC, Byers SR. Evaluation of activated hydrogen peroxide and peroxygen disinfectants as misting applications. Oral Presentation: CRWAD, Chicago, IL, 7-10 December 2013.

Saklou, NT, Burgess, B, Morley PS, Goehring, LS Environmental Survival of Equid Herpesvirus Type 1 (EHV-1). Poster presentation: CVMA Loveland, CO, 19-21 September 2013.

Saklou, NT, Burgess, BA, Morley, PS, Goehring, LS. Equine herpesvirus type 1 (EHV-1) in the environment: How long will it stay infective? Oral Presentation: BEVA, Manchester, UK. 11-13 September 2013 Presenter: LS Goehring.

Saklou, NT, Burgess, B, Morley PS, Goehring, LS Environmental Survival of Equid Herpesvirus Type 1 (EHV-1). Poster presentation: ACVIM Seattle, WA, 12-15 June 2013.

Saklou, NT, Burgess, B, Morley, PS, Goehring, LS. Equid Herpesvirus-1 survival in the environment. Oral presentation: CSU CVMBS Research Day, Fort Collins, CO, 26 January 2013.

Saklou, NT, Ashton, LV, Goehring, LS. Equid Herpesvirus-1 survival in the environment. Oral presentation: CRWAD, Chicago, IL, 2 December 2012.

Barasona, JA, Vercauteren, KC, **Saklou, N.**, Cristobal, I., Gortazar, C. and Vicente, J. Effectiveness of exclusion measures for preventing multi-host interaction at water sources under dry conditions. Oral presentation: Joint WDA/EWDA Conference, Lyon, France. Student sessions. 26 July 2012. *Presenter: JA Barasona.*

Nol, P, Rhyan, J, Robbe-Austerman, S, McCollum, M and **Saklou, N.** Investigation of indirect transmission of *M. bovis* BCG from orally vaccinated white-tailed deer to cattle. Accepted: International WDA Conference, Quebec City, Quebec, Canada. August 2011. *Presenter: P Nol.*

Examination Graduate Committee

Major Advisor/Chair:

Kevin Lahmers, DVM, PhD, DACVP
Clinical Associate Professor
Department of Biomedical Sciences and
Pathobiology
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Graduate Advising Committee Members:

Brandy Burgess, DVM, MSc, PhD, DACVIM (LAIM), DACVPM
Associate Professor, Director of Infection Control
Department of Population Health, Food Animal Health and
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