

DR. JENNIFER CAIN

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EDUCATION

2022	Doctor of Philosophy (PhD), Veterinary Science University of Kentucky, Lexington, KY	2017	Masters of Science (MS), Biology University of Nebraska – Kearney, Kearney, NE
2013	Bachelors of Science (BS), Biology Westminster College, Salt Lake City, UT	2009	High School Diploma Maplewood High School, Guys Mills, PA

EMPLOYMENT HISTORY

PARASIGHT SYSTEM INC

Parasitologist, April 2022 – Present

- Mentored and trained three undergraduate employees and mentored one undergraduate student for a capstone research internship
- Assisted in development of an automated fecal egg count system for cats and dogs including specimen collection, parasite identification and fecal egg counts, system performance analysis, and algorithm training
- Developed and validated specific molecular stains for different parasite species, including sample collection on farms and via collaborations, egg identification and isolation, staining, and data analysis
- Attended research conferences and trade shows to promote business operations and sales

UNIVERSITY OF KENTUCKY MAXWELL H. GLUCK EQUINE RESEARCH CENTER

PhD Candidate / Graduate Research Assistant, May 2017 – December 2022

- Managed multiple independent equine parasitology research projects, including coordinating shipping and supplies, statistical analysis, training five undergraduate students, and advising one undergraduate research internship student
- Submitted 5+ grants and fully funded PhD project, wrote and published six scientific papers with three more in progress, and presented at national and international conferences
- Performed PCR, qPCR, NGS library preparation, fecal egg counts, sample collection from horses at the research farm and at necropsy, electron microscopy, traditional light microscopy, parasite identification

KENTUCKY STATE POLICE CENTRAL FORENSICS LABORATORY

Forensic Biologist I, December 2016 – April 2017

- Approved for blood serological analysis of evidence, trained in saliva and semen serological analysis, and trained in manual and robotic DNA extraction and quantitation methods

UNITED STATES ARMY

68S Preventive Medicine Specialist, November 2013 – December 2016

- Wrote and submitted technical reports regarding findings for inspections to higher command
- Trained in water testing, food safety inspection, OSHA compliance inspection, infectious disease surveillance and training, entomology, pest control, and CBRNE
- Served overseas in South Korea, maintaining training records for a company of 170+ personnel and ensuring that drinking water was safe for use by 10,000+ personnel during three major international field problems via biological and chemical laboratory testing

ORGANIZATIONS AND AWARDS

AAVP/Merck Outstanding Graduate Student	2022
American Association of Veterinary Parasitologists	2017 – Present
World Association for the Advancement of Veterinary Parasitology	2020 – Present
Beta Beta Beta	2012
Phi Alpha Theta	2013

PUBLICATIONS

*INDICATES MENTORED STUDENT

IN PROGRESS PUBLICATIONS

Cain JL, Cox JJ. 2023. Parasite prevalence and anthelmintic efficacy in elk (*Cervus canadensis*) captured in eastern Kentucky. *Vet Parasitol: Regional Studies and Reports. In preparation.*

Cain JL, Norris JK, Swan MP, Nielsen MK. 2023. Investigation of a diverse microbial community associated with the gonad of female *Parascaris* spp. infecting juvenile horses. *Int J Parasitol. In preparation.*

ACCEPTED PUBLICATIONS

Cain JL, Norris JK, Ripley NE, Suri P, Finnerty CA, Gravatte HS, Nielsen MK. 2022. The microbial community associated with *Parascaris* spp. infecting juvenile horses. *Parasit Vectors.* 15: 408.

Cain JL. 2022. The microbiome of the equine roundworm, *Parascaris* spp. University of Kentucky Theses and Dissertations--Veterinary Science. 57.

Cain JL, Nielsen MK. 2022. The equine ascarids: resuscitating historic model organisms for modern purposes. *Parasitol Res.* 121(9):2772-2791.

Cain JL, Peters KT*, Suri P, Roher A*, Rutledge MH, Nielsen MK. 2021. The effect of analyst training on fecal egg counting variability. *Parasitol Res.* 120(4):1363-1370.

Cain JL, Slusarewicz P, Rutledge MH, McVey MR*, Wielgus KM, Zynda HM, Wehling LM*, Scare JA, Steuer AE, Nielsen MK. 2020. Diagnostic performance of McMaster, Wisconsin, and automated egg counting techniques for enumeration of equine strongyle eggs in fecal samples. *Vet Parasitol.* 284:109199.

Cain JL, Foulk D, Jedrzejewski E, Stofanak H, Nielsen MK. 2019. The importance of anthelmintic efficacy monitoring: results of an outreach effort. *Parasitol Res.* 118(10):2877-2883.

Cain JL, Jarisch K, Macaluso KR, Luedtke BE. 2018. Correlation between fecal egg count, presence of *Strongylus vulgaris*, and body score of feral horses on Fort Polk, Louisiana. *Vet Parasitol: Regional Studies and Reports.* 13:14-17.

PRESENTATIONS

Cain JL, Slusarewicz P. 2023. Continuing Education Lecture: NAVC Veterinary Meeting and Expo, Orlando, FL. *Poo, Your Practice, and You: AI technology for improved parasite diagnostics.*

Cain JL. 2022. Presentation: American Association of Veterinary Scientists, Snowbird, UT. *From dealing with crap to playing in it: My journey to parasitology.*

Cain JL, Norris JK, Shields JP, Nielsen MK. 2022. Presentation: American Association of Veterinary Scientists, Snowbird, UT. *Girl power: The microbiome of Parascaris spp. female gonads.*

Cain JL, Peters KT, Slusarewicz P, Suri P, Roher A, Rutledge MH, Wielgus KM, Zynda HM, McVey MR, Wehling LM, Nielsen MK. 2021. Presentation: 11th Equine Infectious Disease Conference, Online. *Automated parasite fecal egg counts: Limiting the room for error.*

Cain JL, Norris JK, Gravatte HS, Nielsen MK. 2021. Presentation: 11th Equine Infectious Disease Conference, Online. *Characterizing the Parascaris spp. microbiome.*

Cain JL, Norris JK, Gravatte HS, Nielsen MK. 2021. Presentation: World Association for the Advancement of Veterinary Parasitology, Online. *Profiling parasites: the Parascaris spp. microbiome.*

Cain JL, Peters KT, Suri P, Roher A, Rutledge MH, Nielsen MK. 2021. Presentation: American Association of Veterinary Parasitologists, Lexington, KY. *Too cool for school: How analyst training affects fecal egg count variability.*

Cain JL, Norris JK, Gravatte HS, Shaffer CL, Nielsen MK. 2020. Presentation: American Association of Veterinary Parasitologists, Online. *The microbiome of Parascaris spp.: A pilot study.*

Cain JL, Peters KT, Suri P, Roher A, Nielsen MK (2020) Poster: American Association of Veterinary Parasitologists, Online. *Analyst variability at the counting step for McMaster, Wisconsin, and automated equine fecal egg count methods.*

Cain JL, Foulk D, Jedrzejewski E, Stofanak H, Nielsen MK (2019) Presentation: World Association for the Advancement of Veterinary Parasitology, Madison, WI. *The importance of anthelmintic efficacy monitoring: Results of an outreach effort.*

Cain JL, Slusarewicz P, Wehling LM, Wielgus KM, Zynda HM, McVey MR, Roemmele E, Nielsen MK. 2019. Presentation: World Association for the Advancement of Veterinary Parasitology, Madison, WI. *Precision, sensitivity, and specificity analysis of an automated parasite fecal egg counting system in comparison to McMaster and Wisconsin methods.*

Cain JL, Slusarewicz P, Wehling LM, Wielgus KM, Zynda HM, McVey MR, Nielsen MK. 2018. Presentation: American Association of Veterinary Parasitologists, Denver, CO. *Precision analysis of an automated parasite fecal egg counting system in comparison to McMaster and Wisconsin methods.*

Cain JL, Roe K, Macaluso K, Luedtke B. 2017. Presentation: American Association of Veterinary Parasitologists, Indianapolis, IN. *The Effect of Fecal Egg Count Data and Presence of Strongylus vulgaris on Body Score of Feral Horses on Fort Polk, Louisiana.*

FUNDING

June 2021 - April 2022. Zoetis. Characterizing the microbiome of *Parascaris* spp.: Life stages and localization. Award Amount: **\$20,191**

September 2018 - September 2020. National Center for Veterinary Parasitology. Mapping the intestinal microbiome of *Parascaris* spp.: A pilot study. Award Amount: **\$11,925**