



KRISTINA CERES

DVM-PhD Candidate

✉ kc649@cornell.edu

📍 Department of Population Medicine and Diagnostic Sciences
Cornell University Ithaca, NY

CAREER GOALS

I am pursuing combined DVM-PhD training because I want to develop multidisciplinary skills in epidemiology, computational biology, statistics and veterinary medicine so that I can drive impactful research in molecular epidemiology. I want to be a leader in quantitative epidemiology research aimed at understanding and preventing infectious disease transmission using data driven, computational approaches. I plan to use each part of my diverse training in epidemiology, statistics, genomics and veterinary medicine, and bridge these experiences together to create my own niche: comparative computational infectious disease epidemiology

EDUCATION

- 2015-Present **Combined DVM-PhD candidate, Cornell University, Ithaca, NY**
- 2011-2015 **Bachelor of Science, Cornell University, Ithaca, NY**
Animal Science, Cum laude, Distinction in Research

RESEARCH EXPERIENCE

- 2017-Present **Graduate student, Population Medicine and Epidemiology**
Gröhn Lab, Cornell University

I'm a 4rd year graduate student in the Gröhn lab studying epidemiology, applied statistics and genomics. My main research focus is in the epidemiology and evolution of pathogenic mycobacteria. My first project involved building a hidden Markov model to characterize Johne's differential disease progression patterns in dairy cattle. My second project involves studying the molecular epidemiology and evolution of *Mycobacterium bovis*, the causitive agent of bovine tuberculosis in collaboration with the National Veterinary Services Laboratory, USDA. I'm also developing computational methods for outbreak investigation that use whole genome sequencing data but dont rely on Wright-Fisher based models for inference.

- Spring 2017 **Rotation student, Ivanek Lab, Cornell University**

I worked in Dr. Renata Ivanek's lab on two projects as a rotation student. First, I co-authored a scoping review on Listeria monocytogenes monitoring programs in food processing environments. I also developed interview questions for dairy and feedlot farmers and conducted a pilot interview with a dairy veterinarian to better understand decisionmaking processes surrounding antimicrobial use on dairy farms.

- Spring 2017 **Research assistant Veterinary Leadership Program, Cornell University**

I created an agent-based model of environmental transmission of *Mycobacterium avium* subsp. *paratuberculosis* (MAP), the causative agent of Johne's disease, on a dairy farm using Netlogo software. I presented my projet to the program and faculty as well as at the Biological and Biomedical sciences symposium. I also learned from experienced academic researchers about different research-oriented careers, leadership skills and graduate training opportunities for veterinarians.

- 2014-2015 **Undergraduate Research Assistant, Behling-Kelly Lab, Cornell University**

I developed an immunohistochemistry protocol to label lipoprotein receptors in canine lymphoma tissue and completed an undergraduate thesis in the Animal Science Honors Program to earn a degree with distinction in research. I continued working on the project determining the relationship between lipoprotein receptor staining and disease phenotypes through the Cornell Veterinary Investigator Program before entering veterinary school. I presented the project to program colleagues, and faculty members and at the 2015 NIH-Merial Symposium at UC Davis. This work was published in December 2018 in *Front. Vet Sci.*

TEACHING EXPERIENCE

Spring 2019 **Teaching assistant, Histology**

I was the lead teaching assistant for an undergraduate histology course. In addition to normal teaching duties I also prepared and gave three lectures on digestive system histology.

Fall 2018 **Teaching assistant, Biostatistics**

I was a teaching assitant for an introductory biostatistics course for Masters in Public Health students. In addition to normal teaching assistant duties, I gave a 75 minute interactive lecture on confidence interval calculations and interpretation.

2012-2017 **Climbing instructor, Cornell Outdoor Education**

I've taught more than 10 rock and ice climbing courses, including five courses where I was lead instructor. I have also helped lead instructor trainings in indoor and outdoor rock climbing, and lead 6 day pre-orieintation trips for incomming undergraduate students.

Fall 2015, Spring 2013 **Undergraduate Teaching Assistant, Animal physiology, Animal reproduction**

As an undergraduate I was a teaching assistant for two laboratory based courses: Animal Reproduction (2012) and Animal Physiology Experimentation (2013). For both courses I facilitated laboratories and helped develop and grade exams. I also occasionally gave pre-laboratory lectures describing the core physiology concepts we would cover during the lab.

LEADERSHIP AND MENTORING

2018-2021 **Cornell Representative, National Association of Veterinary Scientists**

I am the webmaster and previous co-communications lead for this national organization of combined DVM-PhD students. I developed a website for our organization and manage a slack channel to increase connectivity among students and alunmi at different programs. I'm also leading a project do survey current students and alumni to evaluate trends in careers in program alumni.

2018-2021 **DVM-PhD representative, BBS Graduate Student Society**

I work with a group of Biological and Biomedical Sciences (BBS) graduate students to develop social activities for our PhD program. My specific role is to hel facilitate the transition for combined DVM-PhD students from the DVM to the PhD portion of the program.

2016- 2020 **CVM club executive board member**

I am currently the treasurer of the Cornell Veterinary Sustainability Club and the Association of Veterinary Scientists. Previously I have been on the executive boards of the Veterinary Education Club, and the Zoo and Wildlife Society. I was also a veterinary peer mentor for 5 first year DVM students. Each position was held for 1 year.

2014- 2018 **Mentor, College Discovery Progam, Ithaca Youth Bureau**

I met with an Ithaca middle school-high school student weekly to hike, draw, bake and generally have fun together as part of the College Discovery Program, which aims to increase college enrollement among low-income or at risk students in our community.

PROFESSIONAL SKILLS



WORKSHOP/SYMOSIUM LEADERSHIP

- May 2018 **Workshop developer and leader, Principles and dynamics governing transmission of mycobacterial infection Symposium, Wageningen University, Netherlands**
I designed and lead two three-hour workshop on using agent based models for studying Johne's disease transmission, control and economics as part of a three-day workshop.
- April 2018 **Workshop leader, Expanding Your Horizons, Cornell University**
I co-lead a one day virology workshop for 7-9 grade girls to help generate interest in STEM careers.
- April 2017 **Coordinator, Special Species Symposium, Cornell University**
I was the leader of a team that fundraised for and organized a three day symposium consisting of 15 lectures, 10 wetlabs and a banquet and silent auction focusing on wildlife and exotic veterinary medicine.

AWARDS

- 2020 **USDA NIFA Predoctoral Fellowship Recipient, USDA, two years, \$120,000**
- 2019 **Scholarship Recipient, AVMF-Harold Wetterberg Foundation Scholarship**
- 2018 **First place poster, Conference for Research Workers in Animal Disease**
- 2014 **Moriah Leadership Award, Cornell Outdoor Education**

PRESENTATIONS

- 2020 **Conference for Research Workers in Animal Disease, Chicago, IL**
Virtual oral presentation: Exploring mechanisms of accessory genome evolution in the clonally evolving *Mycobacterium tuberculosis* complex
- 2019 **Conference for Research Workers in Animal Disease, Chicago, IL**
Oral presentation: *Characterizing infection trajectories of slowly progressing infectious disease using hidden Markov models*
- 2018 **ISVEE, Chiang Mai, Thailand**
International symposium for Veterinary Epidemiology and Economics
Poster: Environmental transmission of Mycobacterium avium paratuberculosis: an Individual based model
- 2018 **Conference for Research Workers in Animal Disease, Chicago, IL**
Poster title: *Environmental persistence of Mycobacterium avium ssp. paratuberculosis as a barrier to Johne's disease elimination*
- 2015, 2017, 2019 **National Veterinary Scholars Symposium**
Posters presented in Davis CA (2015), College Station TX (2017), Bethesda MD (2018), Worcester, MA (2019)

PUBLICATIONS

Ceres, K. M., Schukken, Y. H., & Gröhn, Y. T. (2020). Characterizing infectious disease progression through discrete states using hidden Markov models. *PLoS one*, 15(11), e0242683.

Wemette, M., Safi, A. G., Beauvais, W., **Ceres, K.**, Shapiro, M., Moroni, P., ... & Ivanek, R. (2020). New York State dairy farmers' perceptions of antibiotic use and resistance: A qualitative interview study. *PLoS one*, 15(5), e0232937.

Zoellner, C., **Ceres, K.**, Ghezzi-Kopel, K., Wiedmann, M., & Ivanek, R. (2018). Design elements of Listeria environmental monitoring programs in food processing facilities: A scoping review of research and guidance materials. *Comprehensive Reviews in Food Science and Food Safety*, 17(5), 1156- 1171.

Ceres, K., Fitzgerald, H. F., Quiznon, K. S., McDonough, S. P. & E. L. Behling-Kelly, (2018). Immunohistochemical labeling of low-density lipoprotein receptor and scavenger receptor class B type 1 are increased in canine lymphoma. *Frontiers in veterinary science*, 5, 340.