

## **Craig Miller**

Assistant Professor  
Veterinary Pathology  
College of Veterinary Medicine  
Oklahoma State University

### **Contact Information:**

Email: [craig.miller@okstate.edu](mailto:craig.miller@okstate.edu)

Phone: 405-744-2219

Office: 250 McElroy Hall, Oklahoma State University, Stillwater, OK 74078

### **Research Interests:**

Dr. Miller's research endeavors are focused primarily on understanding the immunopathology of infectious diseases and include translational lentivirus infection studies using feline immunodeficiency virus (FIV) to study HIV pathogenesis, as well as novel approaches in host-pathogen transcriptomics to reveal therapeutic targets of apicomplexan parasite infection in domestic animals. His laboratory specializes in a large number of diagnostic assays including histology, immunohistochemistry, ELISA, quantitative and droplet digital PCR, microsphere immunoassay, western blot, single-cell RNA sequencing, and flow cytometry. Dr. Miller is a member of the Phi Zeta Honor Society and the American College of Veterinary Pathologists.

### **Education:**

2011-2017: Ph.D., Doctor of Philosophy, Veterinary Pathology and Pathobiology, Colorado State University

2007-2011: D.V.M., Veterinary Medicine, Anatomic Pathology, Colorado State University

2003-2007: B.S., Microbiology, Colorado State University

### **Academic Appointments:**

2020-Present: Co-Director, Oklahoma State University, Immunopathology Core Laboratory

2018-Present: Assistant Professor, Anatomic Pathologist, Oklahoma State University

2015-2018: Post-Doctoral Fellow, Colorado State University

2011-2015: Residency in Veterinary Anatomic Pathology, Colorado State University

### **Awards and Honors:**

2017: Diplomate, American College of Veterinary Pathologists (ACVP), Anatomic Pathology

2018: Oklahoma State Board of Veterinary Medical Examiners, Faculty License #328

2011: Colorado State Board of Veterinary Medicine, Academic Veterinary License

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### **Research Support:**

- 2019: Research Advisory Committee Seed Grant, Miller (PI), "Combined host-pathogen transcriptomics to reveal therapeutic targets of *Cytauxzoon felis* infection", Oklahoma State University, Center for Veterinary Health Sciences (CVHS), Awarded: \$24,970.00
- 2016: F32 Research Fellowship Award, Miller (PI) (1F32DE026679) "FIV as a model to study pathogenesis and treatment of HIV-induced oral disease in children" National

Institutes of Health-National Institute of Dental and Craniofacial Research (NIDCR)  
Awarded: \$192,510.00

- 2016: T32 Institutional National Research Service Award, “Biomedical Research Training for Veterinarians”, NIH Ruth Kirstein Institutional National Research Service Award Training Grant (T32 NRSA) Colorado State University-College of Veterinary Medicine and Biomedical Sciences (CVMBS)

### **Selected Publications:**

1. Miller C., Abdo Z., Ericsson A., Elder J., & VandeWoude S. (2018). Applications of the FIV Model to Study HIV Pathogenesis. *Viruses*. 2018 Apr 20;10(4).
2. Miller, C., Emanuelli, M., Fink, E., Musselman, E., Mackie, R., Troyer, R., ... & VandeWoude, S. (2018). FIV vaccine with receptor epitopes results in neutralizing antibodies but does not confer resistance to challenge. *NPJ vaccines*, 3.
3. Sztukowski, K., Nip, K., Ostwald, P.N., Sathler, M.F., Sun, J.L., Shou, J., Jorgensen, E.T., Brown, T.E., Elder, J.H., Miller, C. and Hofmann, F. (2018). HIV induces synaptic hyperexcitation via cGMP-dependent protein kinase II activation in the FIV infection model. *PLoS biology*, 16(7), p.e2005315.
4. Kopanke, J.H., Horak, K.E., Musselman, E., Miller, C.A., Bennett, K., Olver, C.S., Volker, S.F., VandeWoude, S. and Bevins, S.N. (2018). Effects of low-level brodifacoum exposure on the feline immune response. *Scientific reports*, 8(1), p.8168.
5. Miller, C., Boegler, K., Carver, S., MacMillan, M., Bielefeldt-Ohmann, H., & VandeWoude, S. (2017). Pathogenesis of oral FIV infection. *PloS one*, 12(9), e0185138.
6. Kaye, S., Wang, W., Miller, C., McLuckie, A., Beatty, J.A., Grant, C.K., VandeWoude, S., & Bielefeldt-Ohmann, H. (2016) Role of Feline Immunodeficiency Virus in Lymphomagenesis - Going Alone or Colluding? *ILAR Journal*. 57 (1): 24-33
7. Miller, C., Durham, A., Schaffer, P., Ehrhart, E., Powers, B., & Duncan, C. (2015) Classification and Clinical Features in 88 Cases of Equine Cutaneous Lymphoma. *J Vet Diagn Invest*. 27(1).
8. Daniel, A., McCue, P., Ferris, R., Miller, C., & Leise, B. (2015). Bilateral ovarian leiomyoma treated by standing laparoscopic ovariectomy. *Equine Veterinary Education*, 27(10), 510-514.
9. Malmlov, A., Campbell, T., Monnet, E., Miller, C., Miceli, B., & Duncan, C. (2014). Diagnosis, Surgical Treatment, Recovery, and Eventual Necropsy of a Leopard (*Panthera pardus*) with Thyroid Carcinoma. *Case Reports in Veterinary Medicine*.
10. Magden, E., Miller, C., MacMillan, M., Bielefeldt-Ohmann, H., Avery, A., Quackenbush, S. L., & VandeWoude, S. (2013). Acute virulent infection with feline immunodeficiency virus (FIV) results in lymphomagenesis via an indirect mechanism. *Virology*, 436(2), 284-294.
11. Miller, C., Boegler, K., & VandeWoude, S. Characterization of feline immunodeficiency virus (FIV) excretion and tissue tropism in feline saliva and oral tissues. In: Rovnak, J., Stone, A., & Cohrs, R. J. (2012). *The 12th Annual Meeting of the Rocky Mountain Virology Association: Current Advances in Virology in the Rocky Mountain Region*. *Translational Biomedicine*, 3(4).
12. Miller, C., Bielefeldt-Ohmann, H., MacMillan, M., Huitron-Resendiz, S., Henriksen, S., Elder, J., & VandeWoude, S. (2011). Strain-specific viral distribution and

neuropathology of feline immunodeficiency virus. *Veterinary immunology and immunopathology*, 143(3), 282-291.

13. M. MacMillan, E. Magden, C. Miller, A. Avery, S. Quackenbush, H. Bielefeldt-Ohmann, S. VandeWoude. Rapid development of lymphomas in cats with virulent FIV infection. In Roca, A. L. (2011). 10th International Feline Retrovirus Research Symposium 2010. Preface. *Veterinary immunology and immunopathology*, 143(3-4), 177-178