

## **Jerry William Ritchey, Ph.D., D.V.M.**

Professor and Department Head  
Department of Veterinary Pathobiology  
College of Veterinary Medicine  
Oklahoma State University

### **Contact Information:**

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### **Education:**

1987: B.S., Microbiology, Oklahoma State University

1991: D.V.M., Veterinary Medicine, Oklahoma State University

1997: Ph.D., Immunology, North Carolina State University

### **Academic Appointments:**

2015-present: Professor and Head, Department of Veterinary Pathobiology, Center for Veterinary Health Sciences, Oklahoma State University

2013-present: Director, Immunopathology Core Program, Oklahoma Center for Respiratory and Infectious Diseases

2009-2015: Professor of Pathology, Department of Veterinary Pathobiology, Center for Veterinary Health Sciences, Oklahoma State University

2012-2013: Interim Director, Oklahoma Animal Disease Diagnostic Laboratory (OADDL), Center for Veterinary Health Sciences, Oklahoma State University

2003-2009: Associate Professor of Pathology, Department of Veterinary Pathobiology, College of Veterinary Medicine, Oklahoma State University

1997-2003: Assistant Professor of Pathology, Department of Veterinary Pathobiology, College of Veterinary Medicine, Oklahoma State University

1993-1997: Graduate Research Assistant, Department of Microbiology, Pathology, and Parasitology, College of Veterinary Medicine, North Carolina State University, Major: Immunology; Minor: Biotechnology

1991-1993: Resident in Veterinary Anatomic Pathology, Veterinary Teaching Hospital, College of Veterinary Medicine, North Carolina State University

### **Awards and Honors**

2019: OSU-CVM, Class of 2018 Commencement Reader

2018: OSU-CVM, Class of 2018 Commencement Reader

2017: Zoetis Distinguished Veterinary Teacher Award

2016: OSU-CVM, Class of 2019 Class Teaching Award

2016: OSU-CVM, Class of 2016 Commencement Address

2012: OSU-CVM, Class of 2010 Commencement Reader

2010: OSU-CVM, Class of 2010 Commencement Hooder

2008: OSU-CVM, Class of 2008 Commencement Address

2007: Gamma Sigma Delta Excellence in Teaching Award

2006: Regents' Distinguished Teacher, Oklahoma State University

2006: OSU-CVM, Class of 2006 Commencement Address

2000: OSU-CVM, Class of 2005 Commencement Address

2003: Regents' Distinguished Teacher, Oklahoma State University

2002: Sigma Xi Young Investigator Award, Oklahoma State University

2002: OSU-CVM, Class of 2002 Commencement Address  
1997: Mentored Clinical Scientist Development Award, NIH  
1996: Dr. Monica Menard Memorial Award for excellence in pathobiological research  
1993: C.L. Davis, DVM Foundation Student Scholarship Award  
1991: Gamma Sigma Delta, Honor Society of Agriculture  
1991: Phi Zeta, Honor Society of Veterinary Medicine

### **Other Professional Experiences and Memberships:**

2019: Member, American College of Veterinary Pathologists, Governance Task Force  
2017-present: Councilman, American College of Veterinary Pathologists  
2016: Member, American College of Veterinary Pathologists, Annual Meeting Task Force  
2014-2016: Chairperson, American College of Veterinary Pathologists, Task Force on feasibility of online, open access publication of Pathology Case Reports  
2012-2013: Association of American Veterinary Medical Colleges Leadership Academy  
2012: Education Program Chair for the 2012 Annual Meeting of the American College of Veterinary Pathologists  
2011: Chairperson, Education Committee, American College of Veterinary Pathologists  
2010: Invited Reviewer, USDA-CSREES Avian Influenza CAP  
2010: Invited Reviewer, NIH NIAID Special Emphasis Panel (HIV Vaccine Development)  
2009: Invited Reviewer, NIH NIAID Special Emphasis Panel (HIV Vaccine Development)  
2008: Panel Manager, USDA-CSREES PRRSV CAP  
2007: Panel Manager, USDA-CSREES Avian Influenza CAP  
2007-2009: Secretary, Chapter 101, Sigma Xi, Oklahoma State University  
2007: Invited Reviewer, USDA Coordinated Agriculture Programs (CAP), Johnes Disease & PRRSV  
2006: Invited Reviewer, NIH NIAID Special Emphasis Panel (Allergy)  
2004: Invited Reviewer, NIH NIAID Special Emphasis Panel (Immune System Development and the Genesis of Asthma)  
2003-2005: Chairperson, Diagnostic Pathology Specialty Session, American College of Veterinary Pathologists  
1999-2005: Member, Natural Disease Specialty Committee, American College of Veterinary Pathologists  
2003-2007: Anatomic Pathology Residency Coordinator, Department of Veterinary Pathobiology, College of Veterinary Medicine, Oklahoma State University  
2003: Chairperson, Natural Disease Specialty Session, Annual Meeting of the American College of Veterinary Pathologists  
2002-2004: Member at Large, Education Committee, American College of Veterinary Pathologists  
2002-2004-2006-2007: President, Nu Chapter, Phi Zeta, Oklahoma State University  
2000: Chairperson, Natural Disease Specialty Session, Annual Meeting of the American College of Veterinary Pathologists

### **Research Support:**

Current:

- 2013-2018: NIH COBRE, "Immunopathology Core Program", Oklahoma Center for Respiratory and Infectious Diseases (OCRID), Awarded: \$11,274,000, Role: Core Director

Past:

- 2012-2014: OCAST, "Antimicrobial therapy using immunomodulatory peptides", Awarded: \$90,000, Role: Pathology Support
- 2012-2014: OCAST, "Development of immune boosting feed additives", Awarded: \$90,000, Role: Pathology Support
- 2011-2014: OCAST, "Photonic-needle assessment of hepatic steatosis", Awarded: \$135,000, Role: Pathology Support,
- 2013: OSU Office of Research, Major Instrumentation Grant Program, "BD FACSAria flow cytometer, cell sorter", Awarded: \$316,776, Role: Co-Principal Investigator

- 2009-2011: Grayson Jockey Club, "Prevention of EHV-1 myeloencephalitis by delayed therapy", Awarded: \$104,431, Role: Pathology Support
- 2009-2011: OCAST, "Pre-Clinical Investigation of Nitron Anti-Glioma Agent", Awarded: \$14,000, Role: Pathology Support
- 2008-2011: USDA, "Enhancing Disease Resistance by Boosting Innate Immunity", Role: Pathology support, Awarded: \$365,757, Role: Pathology Support
- 2007-2010: Army Med Res Mat Command, "Transrectal near-infrared optical tomography for prostate imaging", Role: Pathology support, Awarded: \$306,238
- 2007-2009: OCAST Applied Research, "Novel antimicrobial peptides as anti-sepsis drugs", Awarded: \$90,000, Role: Pathology Support
- 2007-2009: OCAST Health Research, "Enteric defensins and inflammatory bowel disease", Awarded: \$90,000, Role: Pathology Support
- 2007-2008: ACLAM Foundation and Dolphin Trust, "Model-tested efficacy of nucleoside analogs for treatment of BV infection", Awarded: \$10,000, Role: Principle Investigator
- 2002-2006: NIH NCRR, "Murine model for monkey B virus infection", Awarded: \$695,050, Role: Principle Investigator
- 2000-2003: USDA CSREES, "Genetic construction of bovine CD18 that resists P. haemolytica leukotoxin", Awarded: \$150,000, Role: Principle Investigator,
- 1998-2000: OAES, "Characterization of the alveolar macrophage cytokine responses to P. haemolytica", Awarded: \$36,000, Role: Principle Investigator
- 1997-2001: NIH-NIAID K08, "Microbicidal defects of alveolar macrophages in FIV-infected cats.", Awarded: \$343,656, Role: Principle Investigator

#### **Selected Publications:**

1. Embi AA, Scherlag BJ, **Ritchey JW**. Glycogen and the propensity for atrial fibrillation: intrinsic anatomic differences in glycogen in the left and right atria in the goat heart. *North Am J Med Sci* 6:510-515, 2014.
2. Black D, **Ritchey J**, Payton M, Eberle R. Role of virion host shutoff protein in neurovirulence of monkey B virus (*Macacine herpesvirus 1*). *Virology* 5:274-283, 2014.
3. Brush LA, Black DH, McCormack KA, Maxwell LK, Wright G, **Ritchey JW**, Payton ME, Eberle R. Papiine herpesvirus 2 as a predictive model for drug sensitivity of Macacine herpesvirus 1 (Monkey B Virus). *Comp Med* 64:386-393, 2014.
4. Fulton RW, Herd HR, Sorensen NJ, Confer AW, **Ritchey JW**, Ridpath JF, Burge LJ. Enteric disease in postweaned beef calves associated with bovine coronavirus clade 2. *J Vet Diagn Invest* 27:97-101, 2015.
5. Zhang L, Huang B, Scherlag BJ, **Ritchey JW**, Embi AA, Hu J, Hou Y, Po SS. Structural changes in the progression of atrial fibrillation: potential role of glycogen and fibrosis as perpetuating factors. *Int J Clin Exp Pathol* 8:1712-1718, 2015.
6. de Souza PC, Balasubramanian K, Njoku C, Smith N, Gillespie DL, Schwager A, Adbullah O, **Ritchey JW**, Fung KM, Saunders D, Jensen RL, Towner RA. OKN-007 decreases tumor necrosis and tumor cell proliferation and increases apoptosis in a preclinical F98 rat glioma model. *J Magn Reson Imaging* 42:1582-1591, 2015.
7. Piao D, Sultana N, Holyoak GR, **Ritchey JW**, Wall CR, Murray JK, Bartels KE. In vivo assessment of diet-induced rat hepatic steatosis development by percutaneous single-fiber spectroscopy defects scattering spectral changes due to fatty infiltration. *J Biomed Opt* 20:117002-1-117002-12, 2015.
8. Jann HW, Hart JC, Stein LE, **Ritchey JW**, Blaik M, Payton M, Fackelman GE, Rezabek GB, Mann BK. The effects of a cross-linked, modified hyaluronic acid (xCMHA-S) gel on equine tendon healing. *Vet Surge* 45:231-239, 2016
9. Achanta S, Sewell A, **Ritchey JW**, Broaddus K, Bourne DW, Clarke CR, Maxwell LK. Anatomical and physiological basis for the allometric scaling of cisplatin clearance in dogs. *J Vet Pharmacol Ther* 39:224-236, 2016
10. Wirsdorfer F, De Leve S, Cappuccini F, Eidh T, Meyer AV, Gau E, Thompson LF, Chen NY, Karymouty-Quintana H, Fischer U, Kasper M, Klein D, **Ritchey JW**, Blackburn MR, Westendorf AM, Stuschke M, Jendrosseck V. Extracellular adenosine production by ecto-5'-nucleotidase (CD73) enhances radiation-induced lung fibrosis. *Cancer Res* 76:3045-3056, 2016.
11. Zhao H, Clevenger AL, **Ritchey JW**, Zgurskaya HI, Rybenkov VV. *Pseudomonas aeruginosa* condensins support opposite differentiation states. *J Bacteriol* 198:2936-2944, 2016.
12. Rendina-Ruedy E, Graef JL, Lightfoot SA, **Ritchey JW**, Clarke SL, Lucas EA, Smith BJ. Impaired glucose tolerance attenuates bone accrual by promoting the maturation of osteoblasts: Role of Beclin1-mediated autophagy. *Bone Rep* 5:199-207, 2016.

13. Ladiges W, Ikeno Y, Niedernhofer L, McIndoe RA, Ciol MA, **Ritchey J**, Liggitt D. The Geropathology Research Network: an interdisciplinary approach for integrating pathology into research on aging. *J Gerontol A Biol Sci Med Sci*. 71:431-434, 2016.
14. Moser DK, Schoonover MJ, Sippel KM, Dieterly AM, **Ritchey JW**, Wall CR. Catastrophic complication following injection and extracorporeal shock wave therapy of a medial femoral condyle subchondral cystic lesion in a 14-year-old Arabian mare. *Open Vet J*. 7:111-116, 2017.
15. Maxwell LK, Bentz BG, Gilliam LL, **Ritchey JW**, Pusterla N, Eberle R, Holbrook TC, McFarlane D, Rezabek GB, Meinkoth J, Whitfield C, Goad CL, Allen GP. Efficacy of the early administration of valacyclovir hydrochloride for the treatment of neuropathogenic equine herpesvirus type-1 infection in horses. *Am J Vet Res*. 78:1126-1139, 2017.
16. Ashar HK, Mueller NC, Rudd JM, Snider TA, Achanta M, Prasanthi M, Pulavendran S, Thomas PG, Ramachandran A, Malayer JR, **Ritchey JW**, Rajasekhar R, Chow VTK, Esmon CT, Teluguakula N. The role of extracellular histones in influenza virus pathogenesis. *Am J Pathol*. 188:135-148, 2017.
17. Maria Z, Campolo AR, Scherlag BJ, **Ritchey JW**, Lacombe VA. Dysregulation of insulin-sensitive glucose transporters during insulin resistance-induced atrial fibrillation. *Biochim Biophys Acta*. 1864: 987-996, 2018.
18. McCourt MR, Dieterly AM, Mackey PE, Lyon SD, Rizzi TE, **Ritchey JW**. Complex mammary carcinoma with metastases to lymph nodes, subcutaneous tissue, and multiple joints in a dog. *Vet Clin Pathol*. 47:477-483, 2018.
19. Derakhshan T, Bhowmick R, **Ritchey JW**, Gappa-Fahlenkamp H. Development of human mast cells from hematopoietic stem cells within a 3D collagen matrix: effect of stem cell media on mast cell generation. *Stem Cells Int*. 2018 Jul 11;2018:2136193. doi: 10.1155/2018/2136193. eCollection 2018.
20. Bhowmick R, Derakhshan T, Liang Y, **Ritchey J**, Liu L, Gappa-Fahlenkamp H. A three-dimensional human tissue-engineered lung model to study influenza A infection. *Tissue Eng Part A*. 2018 Oct;24(19-20):1468-1480. doi: 10.1089/ten.TEA.2017.0449. Epub 2018 Jun 29. PMID:29732955
21. Ojo BA, OHara C, Wu L, El-Rassi GD, **Ritchey JW**, Chohanadisai W, Lin D, Smith BJ, Lucas EA. Wheat germ supplementation increases Lactobacillaceae and promotes an anti-inflammatory gut milieu in C57BL/6 mice fed a high-fat, high-sucrose diet. *J Nutr*. 2019 Jun 4. pii: nrx061. doi: 10.1093/jn/nrx061. [Epub ahead of print] PMID: 31162575
22. Rudd JM, Pulavendran S, Ashar HK, **Ritchey JW**, Snider TA, Malayer JR, Marie M, Chow VTK, Narasaraju T. Neutrophils induce a novel chemokine receptors repertoire during influenza pneumonia. *Front Cell Infect Microbiol*. 2019 Apr 16;9:108. doi: 10.3389/fcimb.2019.00108. eCollection 2019. PMID:31041196
23. Liang Y-H, Hudson LC, Levy JK, Ritchey JW, Tompkins WA, Tompkins MB. T cells over expressing-infected cats. *J Inf Dis* 181: 564-575, 2000.
24. Ritchey JW, Levy JK, Bliss SK, Tompkins WA, Tompkins MB. Constitutive Expression of Type 1 and Type 2 cytokines by alveolar macrophages from feline immunodeficiency virus infected cats. *Vet Immunol Immunopathol* 79:83-100, 2001.
25. Chen WR, Liu H, Ritchey JW, Bartels KE, Lucroy MD, Nordquist RE. Effect of different components of laser immunotherapy in treatment of metastatic tumors in rats. *Cancer Res* 62: 4295-4299, 2002.
26. Ritchey JW, Ealey KA, Payton ME, Eberle R. Comparative pathology of infections with baboon and African green monkey  $\alpha$ -herpesviruses in mice. *J Comp Path*. 127: 150-161, 2002.
27. Breshears MA, Black DH, Ritchey JW, Eberle R. Construction and in vivo detection of an enhanced green fluorescent protein expressing strain of Saimirine Herpesvirus 1 (SaHV-1). *Arch Virol* 148:311-327, 2003.
28. Ross JW, Malayer JR, Ritchey JW, Geisert RD. Characterization of the Interleukin-1 (beta) system during porcine trophoblastic elongation and early placental attachment. *Biol Reprod* 69: 1251-1259, 2003.
29. Wynn VM, Davidson EB, Higbee RG, Ritchey JW, Ridgway TD, Bartels KE, Lucroy MD. In vitro effects of pulsed holmium laser energy on canine urolith and porcine cadaveric urethra. *Lasers Surg Med* 33:243-246, 2003.
30. Rogers KM, Ealey KA, Ritchey JW, Black DH, Eberle R. Pathogenicity of different baboon Herpesvirus papio 2 isolates is characterized by either extreme neurovirulence or complete apathogenicity. *J Virol* 77: 10731-10739, 2003.
31. Levy JK, Liang Y, Ritchey JW, Davidson MG, Tompkins WA, Tompkins MB. Failure of FIV-infected cats to control *Toxoplasma gondii* correlates with reduced IL2, IL6 and IL12 and elevated IL10 expression by lymph node T cells. *Vet Immunol Immunopathol* 98: 101-111, 2004.
32. Stair EL, Reddy G, Ritchey JW, Saliki JT, Qualls Jr. CW. Effects of 1,3,5-Trinitrobenzene on cytotoxicity and metabolic activity of Type I astrocytes of rats. *Int J Toxicol* 24: 51-57, 2005.
33. Breshears MA, Eberle R, Ritchey JW. Temporal progression of viral replication and gross and histological lesions in Balb/c mice inoculated epidermally with Saimirine herpesvirus 1 (SaHV-1). *J Comp Path* 133: 103-113, 2005.
34. Coke RL, Backues KA, Hoover JP, Saliki JT, Ritchey JW, West GD. Serologic responses after vaccination of Fennec foxes (*Vulpes zerda*) and Meerkats (*Suricata suricata*) with a live, canarypoxvectored canine distemper virus vaccine. *J Zoo Wildlife Med* 36: 326-330, 2005.

35. Ritchey JW, Payton ME, Eberle R. Clinicopathological characterization of monkey B virus infection in mice. *J Comp Pathol* 132: 202-217, 2005.
36. Rogers KM, Ritchey JW, Payton M, Black DH, Eberle R. Neuropathogenesis of herpesvirus papio 2 in mice parallels infection with Cercopithecine herpesvirus 1 (B virus) in humans. *J Gen Virol* 87:267-276, 2006.
37. Ritchey JW, Black DH, Rogers KM, Eberle R. In vivo experimentation with simian herpesviruses: assessment of biosafety and molecular contamination. *J Am Assoc Lab Anim Sci.* 45:7-12, 2006.
38. Erkert RS, Moll HD, Macallister CG, Confer AW, Ritchey JW. Infiltrative lipoma in an American Quarter Horse gelding. *Equine Vet Educ* 19:380-383, 2007.
39. K. Singh, M. J. Boileau, R. N. Streeter, R. D. Welsh, W. A. Meier and Ritchey, JW. Granulomatous and Eosinophilic Rhinitis in a Cow Caused by *Pseudallescheria boydii* Species Complex (*Anamorph Scedosporium apiospermum*). *Vet Pathol* 44:917-920, 2007.
40. Jiang Z, Piao D, Xu G, Ritchey JW, Holyoak GR, Bartels KE, Bunting CF, Slobodov G, Krasinski JS. Trans-rectal ultrasound-coupled near-infrared tomography of the prostate. Part II: Experimental demonstration. *Optics Express* 22:17505-17520, 2008.
41. Jiang Z, Holyoak GR, Bartels KE, Ritchey JW, Xu G, Bunting CF, Slobodov G, Piao D. In vivo transrectal ultrasound coupled optical tomography of a transmissible venereal tumor model in the canine pelvic canal. *J. Biomed Optics* 14:030506-030508, 2009.
42. Broshnahan MM, Hobrook TC, Gilliam LL, Ritchey JW, Confer AW. Intra-abdominal hypertension in two adult horses. *J Vet Emerg Critical Care* 19:174-180, 2009.
43. Broshnahan MM, Holbrook TC, Ritchey JW. Neuroaxonal dystrophy associated with cerebellar dysfunction in a 5-month-old Pony of the Americas colt. *J Vet Intern Med* 23:1303-1306, 2009
44. Bommineni YR, Achanta M, Alexander J, Sunkara LT, Ritchey JW, Zhang G. A fowlicidin-1 analog protects mice from lethal infections induced by methicillin-resistant *Staphylococcus aureus*. *Peptides* 31:1225-1230, 2010.
45. Stern AW, Ritchey JW, Hall B, Ketz-Riley CJ, Genova SG. Non-steroidal anti-inflammatory drug-associated renal papillary necrosis in a white-tailed deer (*Odocoileus virginianus*). *J Vet Diagn Invest* 22:476-478, 2010.
46. Jiang Z, Piao D, Holyoak GR, Ritchey JW, Bartels KE, Slobodov G, Bunting CF, Krasinski JS. Transrectal ultrasound-coupled spectral optical tomography of total hemoglobin concentration enhances assessment of the laterality and progression of a transmissible venereal tumor in canine prostate. *Urology* 77:237-242, 2011.
47. Singh K, Confer AW, Hope JC, Rizzi T, Wyckoff III JH, Weng HY, Ritchey JW. Cytotoxicity and cytokine production by bovine alveolar macrophages challenged with wild-type and leukotoxin-deficient *Mannheimia haemolytica*. *Vet J* 188:221-227, 2011.
48. Singh K, Ritchey JW, Confer AW. *Mannheimia haemolytica*: bacterial-host interactions in bovine pneumonia. *Vet Pathol* 48: 338-348, 2011.
49. Ritchey JW, Davis MS, Breshears MA, Willard MD, Williamson KK, Royer CM, Payton ME, Cragun AS. Gastritis in Alaskan racing sled dogs. *J Comp Pathol* 45: 68-76.
50. Jiang Z, Piao D, Bartels KE, Holyoak GR, Ritchey JW, Ownby CL, Rock K, Slobodov G. Transrectal ultrasound-integrated spectral optical tomography of hypoxic progression of a regressing tumor in a canine prostate. *Technol Cancer Res Treat* 10:519-531, 2011.
51. He T, Doblas S, Saunders D, Casteel R, Lerner M, Ritchey JW, Snider T, Floyd RA, Towner RA. Effects of PBN and OKN007 in rodent glioma models assessed by 1H MR spectroscopy. *Free Radic Biol Med* 51:490-502, 2011.
52. Tsukamoto H, Chernogorova P, Avata K, Gerlach UV, Rughani A, Ritchey JW, Ganesan J, Follo M, Zeiser R, Thompson LF, Idzko M. Deficiency of CD73/ecto-5'-nucleotidase in mice enhances acute graft-versus-host disease. *Blood* {Epub 2012; PMID:22262774}