

## **Jerry R. Malayer, Ph.D.**

Professor and Associate Dean for Research & Graduate Education  
Department of Physiological Sciences  
College of Veterinary Medicine  
Oklahoma State University

### **Contact Information:**

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### **Education:**

1979: BS, Animal Science, Purdue University, IN

1986: MS, Animal Science, Purdue University, IN

1990: PhD: Animal Science, University of Florida, FL

1994: Postdoctoral, Biochemistry, University of Wisconsin, WI

### **Academic Appointments:**

1994-1999: Assistant Professor, Physiological Sciences Department, Oklahoma State University

1999-2001: Coordinator, Veterinary Biomedical Sciences Graduate Program

1999-2004: Associate Professor (tenured), Physiological Sciences Department

2000-2004: Associate Professor, Adjunct, Department of Biochemistry & Molecular Biology

2001-present: Associate Dean for Research & Graduate Education

2004-present: Professor, Adjunct, Department of Biochemistry & Molecular Biology

2004-present: Professor, Physiological Sciences Department

2010: Director, Oklahoma EPSCoR

### **Awards and Honors:**

2001: Phoenix Award of Excellence -Recognition of "exemplary and outstanding work as a graduate faculty member and graduate student mentor at Oklahoma State University." Awarded by the Graduate and Professional Student Association, Oklahoma State University

2002: Pfizer Animal Health Award for Research Excellence

2004: Oklahoma A&M Regents Distinguished Research Award

2007: Animal Sciences Distinguished Alumnus Award, Purdue University

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

2001-present: Oklahoma Health Research Committee

2001-present: Advisory Review Board, Reproductive Biology & Endocrinology

2004-present: Member of the Advisory Committee, NIH Region VI Center of Excellence for Biodefense and Infectious Disease Research based at the University of Texas Medical Branch

2004-2007: Editorial Board, Domestic Animal Endocrinology

2004-2008: Panelist, Department of Homeland Security Scholarship and Fellowship Program

2007: Panelist, National Science Foundation Graduate Fellowship Program

2007: Panelist, Department of Homeland Security Minority Serving Institution Leadership Program

2008: Panelist, Department of Homeland Security Institutional STEM Training

2008: Panel Chair, Department of Homeland Security Scholarship and Fellowship Program  
2009: Chair, Association of American Veterinary Medical Colleges, Associate Deans for Research Committee  
2009: Oklahoma Science and Technology Council

### **Research Funding:**

Current:

Past:

- 2004- 2007: National Institutes of Health, Small Business Innovation Research (SBIR) Advanced Technology, "Phase II: Rapid Detection of Antibacterial Resistant Infections", Role: Co-Investigator
- 2005-2006: U.S. Army, Department of Defense SBIR A05-122, Phase 1, "Nanotechnology-based System for the Detection and Photodynamic Neutralization of BW Agents", Role: Co-Investigator
- 2005- 2006: U.S. Army, Department of Defense SBIR A05-165, Phase 1, "Fluorescence-based Multiplexed Universal Virus Detection Platform", Role: Co-Investigator
- 2006: Oklahoma Agricultural Experiment Station, Section 1433 Animal Health, "Rapid Serological Screening for Animal Health Diagnostics", Role: Principal Investigator
- 2006- 2007: Oklahoma Agricultural Experiment Station, Second Century Team Initiative, "Bovine Respiratory Disease: Effects on Feedlot Performance, Carcass Characteristics, Meat Quality, and Gene Expression", Role: Co-Investigator
- 2010-2011: U.S. Department of Defense, HHM402-10-C-0065 issued by Virginia Contracting Activity, Development, Test, and Validation of Animal Pathogen Detection Assays, Role: PI
- 2007 -2012: USDA Hatch Funds-Oklahoma Agricultural Experiment Station-Project OKL 02277, "Role of Vitamin A in Modulation of Gene Expression in the Cumulus-Oocyte Complex", Role: PI
- 2009- 2012: U.S. Special Operations Command under SPAWARSCEN, N65236-07-D-7878 / DO 0002 to OSU-University Multispectral Laboratory, Test and Evaluation Program for pathogen decontamination, Role: PI
- 2009-2012: U.S. Department of Homeland Security, HS-STEM Career Development Grant for Oklahoma State University, "Detection, Prevention, Response: Integrating Technical and Social Science Expertise for Management of Extreme Events", Role: Co-Investigator

### **Selected Publications:**

1. Davis, M.S., C.C. Williams, J. Meinkoth, J.R. Malayer, C.M. Royer, K.K. Williamson and E.C. McKenzie. 2007. Influx of neutrophils and persistence of cytokine expression in airways of horses after performing exercise while breathing cold air. *American Journal of Veterinary Research*, 68(2):185-9.
2. Aad, P.Y., J.L. Voge, C.A. Santiago, J.R. Malayer, L.J. Spicer. 2006. Real-time RT-PCR quantification of pregnancy-associated plasma protein-A mRNA abundance in bovine granulosa and theca cells: Effects of hormones in vitro. *Domestic Animal Endocrinology*, 31(4):357-72.
3. Thirumalapura, N., A. Ramachandran and J.R. Malayer. 2006. Bacterial cell microarrays for the detection of antibodies. *Journal of Immunological Methods*, 309(1-2):48-54.
4. Ross, J.W., T.K. Smith, C.R. Krehbiel, J.R. Malayer, U. DeSilva, J.B. Morgan, F.J. White, M.J. Hersom, G.W. Horn, and R.D. Geisert. 2005. Effects of grazing program and subsequent finishing on gene expression in different adipose tissue depots in beef steers. *Journal of Animal Science* 83:1914-1923.
5. Thirumalapura, N., D. Goad, A. Mort, R.J. Morton, J. Clarke and J.R. Malayer. 2005. Structural analysis of the O-antigen of *Francisella tularensis* subspecies *tularensis* strain OSU 10. *Journal of Medical Microbiology* 54(Pt 7):693-695.
6. Davis, M.S., J.R. Malayer, L. Vandeventer, C.M. Royer, E.C. McKenzie and K.K. Williamson. 2005. Cold weather exercise and airway cytokine expression. *Journal of Applied Physiology* 98(6):2132-2136.
7. Thirumalapura, N., A. Ramachandran and J.R. Malayer. 2005. Lipopolysaccharide microarrays for the detection of antibodies. *Journal of Immunological Methods* 298(1-2):73-81.
8. Santiago C.A., J.L.Voge, P.Y. Aad, D.T. Allen, D.R. Stein, J.R. Malayer and L.J. Spicer. 2005. Pregnancy-associated plasma protein-A and insulin-like growth factor binding protein mRNAs in granulosa cells of dominant and subordinate follicles of preovulatory cattle. *Domestic Animal Endocrinology* 28:46-63.

9. Voge J.L., P.Y. Aad, C.A. Santiago, D.W. Goad, J.R. Malayer, D. Allen, and L.J. Spicer. 2004. Effect of insulin-like growth factors (IGF), FSH, and leptin on IGF-binding-protein mRNA expression in bovine granulosa and theca cells: quantitative detection by real-time PCR. *Peptides* 25:2195-2203.
10. Hurst A.G., D.W. Goad, M. Mohan, and J.R. Malayer. 2004. Independent downstream gene expression profiles in the presence of estrogen receptor alpha or beta. *Biology of Reproduction* 71:1252-1261.
11. Mohan M., A.G. Hurst, and J.R. Malayer. 2004. Global gene expression analysis comparing bovine blastocysts flushed on day 7 or produced in vitro. *Molecular Reproduction and Development* 68:288-298.
12. Voge, J. L., C. A. T. Santiago, P. Y. Aad, D. W. Goad, J. R. Malayer and L. J. Spicer. 2004. Quantification of insulin-like growth factor binding-protein mRNA using real-time PCR in bovine granulosa and theca cells: effect of estradiol, insulin and gonadotropins. *Domestic Animal Endocrinology* 26:241-258.
13. Ramachandran, A., J. Flinchbaugh, P. Ayoubi, G.A. Olah, and J.R. Malayer. 2004. Target discrimination by surface-immobilized molecular beacons designed to detect *Francisella tularensis*. *Biosensors and Bioelectronics* 19:727-736.
14. Vonnahme, K.A., S.C. Fernando, J.W. Ross, M.D. Ashworth, U. DeSilva, J.R. Malayer, and R.D. Geisert. 2004. Porcine endometrial expression of kininogen, factor XII and plasma kallikrein in cyclic and pregnant gilts. *Biology of Reproduction* 70:132-138.
15. Geisert, R.D., M.D. Ashworth and J.R. Malayer. 2003. Expression of inter- $\alpha$ -trypsin inhibitor heavy chains in endometrium of cyclic and pregnant gilts. *Reproduction* 126:621-627.
16. Mohan M., N. Thirumalapura, and J. Malayer. 2003. Bovine cumulus-granulosa cells contain biologically active retinoid receptors that can respond to retinoic acid. *Reproductive Biology and Endocrinology* 1:104.
17. Ross, J.W., J.R. Malayer, J.W. Ritchey and R.D. Geisert. 2003. Characterization of the interleukin-1 $\beta$  system during porcine trophoblastic elongation and early placental attachment. *Biology of Reproduction* 69:1251-1259.
18. Ferrell, A.D., J.R. Malayer, K.L. Carraway and R.D. Geisert. 2003. Sialomucin complex (Muc 4) expression in porcine endometrium during the oestrous cycle and early pregnancy. *Reprod Domest Anim* 38:63-65.
19. Ross, J.W., M.D. Ashworth, A.G. Hurst, J.R. Malayer and R.D. Geisert. 2003. Analysis and characterization of differential gene expression during rapid trophoblastic elongation in the pig using suppression subtractive hybridization. *Reproductive Biology and Endocrinology* 1:23.
20. Looper, M.L., J.A. Vizcarra, R.P. Wettemann, J.R. Malayer, T.D. Braden, R.D. Geisert and G.L. Morgan. 2003. Influence of estradiol, progesterone and nutrition on concentrations of gonadotropins and GnRH receptors, and abundance of mRNA for GnRH receptors and gonadotropin subunits in pituitary glands of beef cows. *Journal of Animal Science* 81:269-278.
21. Ramachandran, A., M. Zhang, D. Goad, G. Olah, J.R. Malayer\* and Z. El Rassi\*. 2003. Capillary electrophoresis and fluorescence studies on molecular beacon-based variable length oligonucleotide target discrimination. *Electrophoresis* 24:70-77. (\*Co-senior authors).
22. Clinkenbeard, Kenneth D., Akhilesh Ramachandran, Jerry R. Malayer, Joong Ho Moon, and Lawrence F. Hancock. 2003. Stem-loop oligonucleotide beacons as switches for amplifying fluorescent polymer-based biological warfare sensors. *Proceedings of SPIE, the International Society for Optical Engineering*. ISSN: 0277-786X, Vol 5071, Issue 1, pp 272-9.