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| Education, Training and Credentials | | | | | | | | | | |
|  | DVM, 1996 | | | Faculty of Veterinary Medicine,Jordan University of Science and Technology, Irbid, Jordan | | | | | | | | |
|  | Master of Science, 2000  Ph. D, 2003 | | | Basic Medical Sciences  Purdue University, West Lafayette, IN, USA  Basic Medical Sciences  Purdue University, West Lafayette, IN, USA | | | | | | | | |
| **Current Title and Positions** | | | | | | | | | | |
|  | April-Now | | | FAO consultant -Biosafety and Biosecurity-Global health Security (GHS) | | | | | |
|  | September 2021- September 2023 | | | University Council | | | | | |
|  | September 2018-August 2019 | | | Vice dean | | | | | |
|  | November 2017-now | | | Professor of Anatomy and Histology, Faculty of Veterinary Medicine Department of Basic Medical Veterinary Sciences. Jordan University of Science and Technology | | | | | |
|  | October 2016-August 2017 | | | Assistant dean  Assistant Secretary General of the Scientific Association of Arab Veterinary Colleges | | | | | |
|  | July 2015-November, 2017 | | | Associate Professor of Anatomy and Histology, *Faculty of Veterinary Medicine Department of Basic Medical Veterinary Sciences. Jordan University of Science and Technology* | | | | | |
|  | Sept. 2010-July 2015 | | | Associate Professor of Anatomy and Histology, Department of Anatomy, Faculty of Veterinary Medicine and Animal resources. King Faisal University. Saudi Arabia. | | | | | |
|  | Sept. 2008 – Sept. 2010 | | | Department Head, Department of Basic Medical Veterinary Sciences, Faculty of Veterinary Medicine, Jordan University of Science and Technology (JUST), Irbid, Jordan. | | | | | |
|  | January 2009 – Sept. 2010 | | | Associate professor of Anatomy and Histology.  *Faculty of Veterinary Medicine Department of Basic Medical Veterinary Sciences. Jordan University of Science and Technology* | | | | | |
|  | August 2003- January 2009 | | | Assistant professor of Anatomy and Histology.  *Faculty of Veterinary Medicine Department of Basic Medical Veterinary Sciences. Jordan University of Science and Technology* | | | | | |
| Past Professional Experience | March 2003- August 2003 | | | Post-Doctorate  Department of Basic medical Sciences, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana, USA | | |
|  | August 1999-March 2003 | | | Teaching assistant,  Department of Basic medical Sciences, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana, USA | | |
|  | May 2000- March 2003 | | | Research assistant  Department of Basic medical Sciences, School of Veterinary Medicine, Purdue University, West Lafayette, Indiana, USA | | |
|  | Septmper1996- December 1997 | | | Teaching assistant  Department of Basic Medical Veterinary Sciences, School of Veterinary Medicine, Jordan University of Science & Technology Irbid, Jordan. | | |
| **Awards and Honors** | | | | | | | | | | |
|  | 1998-2003 | | | Graduate Student fellowship, Jordan University of Science and Technology, Irbid, Jordan | | | | | |
|  | April 2000 | | | Graduate Student Award For Outstanding Teaching,  Purdue University | | | | | | | |
|  |
| **Licensure** | 1996-present | | | | Jordan Veterinary Association, Jordan | | | |
|  |  | | |  | |
| **Professional and Scientific Societies** | | | | | | | | | | |
|  | 1996-Present | | Jordan Veterinary Association, Jordan | | | | |
|  | 2001-2002 | | International Association for Food Protection,USA | | | | |
|  | 2008-Present | | African Association of Veterinary Anatomist, Egypt | | | | |
|  | 2008-Present | | American Association of Veterinary Anatomist | | | | |
|  | 2017-present | | American Association of Anatomist | | | | |
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| **Research Interests**   1. Transcriptome analysis and 3rd Generation of Sequencing. 2. Next Generation Sequencing (NGS) and Genetic disorder. 3. Sanger Sequencing and Microsatellite Analysis. 4. Paternity test and Animal breeding selection. 5. Molecular surveillance Middle East respiratory syndrome coronavirus (MERS-CoV) in Jordan 6. Molecular surveillance and typing of Bat viruses in Jordan. 7. Molecular surveillance and typing of major avian respiratory and immunosuppressive viral infections in Jordan 8. Molecular investigating of effects Pre heat treatment in Honeybees on the thermotolerance and physical traits. 9. Effects of Thermal manipulation during Early and Late Embryogenesis on thermotolerance acquisition and muscle growth in meat-typed 10. Effects of Thermal manipulation during Early and Late Embryogenesis on thermotolerance acquisition and muscle growth in meat-type 11. Effects of thermal manipulation during broiler chicken embryogenesis on the gene expression of heat shock protein and factors during acute and chronic heat stress. 12. Effects of thermal manipulation during broiler chicken embryogenesis on the gene expression of antioxidant activities and Oxidative stress response during acute and chronic heat stress. 13. Effects of thermal manipulation during broiler chicken embryogenesis on the gene expression of Cytokine, pro-inflammatory and anti-inflammatory factors during acute and chronic heat stress. 14. Effects of thermal manipulation during broiler chicken embryogenesis on the gene expression of small intestinal transporter genes and small intestine morphology during acute and chronic heat stress. 15. Effects of thermal manipulation during broiler chicken embryogenesis on the gene expression of heat shock protein and factors, Oxidative stress response and immune response following intraperitoneal challenge with E. Coli Infection. 16. Role of IGF-1 and cytokines during muscle hypertrophy and atrophy. 17. Mast cell distribution and density in the digestive and Integument system of young camels. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Publications in Refereed Journals** | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | 1. Alghizzawi, D., Ababneh, M.M., **Al-Zghoul, M.B**. Differentiation of Avian Orthoavulavirus-1, Genotype VII, and it's Sub-Genotypes by High Resolution Melting (HRM) assay. Pakistan Veterinary Journal, 2024, 44(1), pp. 47–54 2. **Al-Zghoul MB**, Jaradat ZW, Ababneh MM, Okour MZ, Saleh KMM, Alkofahi A, Alboom MH. Effects of embryonic thermal manipulation on the immune response to post-hatch Escherichia coli challenge in broiler chicken. Vet World. 2023;16:918-928. 3. Alzoughool F, **Al-Zghoul MB**, Ghanim BY, Gollob M, Idkaidek N, Qinna NA. The Role of Interventional Irisin on Heart Molecular Physiology. Pharmaceuticals (Basel). 2022;15. 4. Alzoughool F, **Al-Zghoul MB**, Ghanim BY, Atoum M, Aljawarneh Y, Idkaidek N, Qinna NA. Impact of Sustained Exogenous Irisin Myokine Administration on Muscle and Myocyte Integrity in Sprague Dawley Rats. Metabolites. 2022;12: 5. Al-Ghzawi, A.A.A.; **Al-Zghoul, M.B**.; Zaitoun, S.; Al-Omary, I.M.Alahmad, N.A. (2022) Dynamics of heat shock proteins and heat shock factor expression during heat stress in daughter workers in pre-heat-treated (rapid heat hardening) Apis mellifera mother queens. J Therm Biol, 104: 103194. 6. Khaleel, K.E.; **Al-Zghoul, M.B**., Saleh, K.M.M. (2021) Molecular and morphometric changes in the small intestine during hot and cold exposure in thermally manipulated broiler chickens. Veterinary World, 14(6): 1511-1528. 7. Hananeh, W.M.; Al Rukibat, R.; Jaradat, S., **Al-Zghoul, MB**. (2021) Exposure assessment of bisphenol A by drinking coffee from plastic cups. Roczniki Panstwowego Zakladu Higieny, 72(1): 49-53. 8. Alzoughool, F. and **Al-Zghoul, M.B**. (2021) Optimal therapeutic adropin dose intervention in mice and rat animal models: A systematic review. Veterinary World, 14(6): 1426-1429. 9. Alanagreh, L.; Ababneh, M.; Al-Shudifat, A.E.; Ajlouny, M.; Abu-Shaikh, H.; Alzoughool, F.; **Al-Zghoul, M.B**.; Atoum, M.Mahafzeh, A. (2021) New SARS-CoV-2 variant from Jordan. Microbiology Resource Announcements, 10(26). 10. Tarkhan, A.H.; Saleh, K.M.M., **Al-Zghoul, M.B.** (2020) HSF3 and Hsp70 expression during post-hatch cold stress in broiler chickens subjected to embryonic thermal manipulation. Veterinary Sciences, 7(2): 1-12. 11. Tarkhan, A.H.; Saleh, K.M.M., **Al-Zghoul, M.B.** (2020) Heat Exposure Affects the mRNA Levels of Antioxidant Enzymes in Embryonic and Adult Broiler Chickens. Jordan Journal of Biological Sciences, 13(4): 431-435. 12. Saleh, K.M.M.; Tarkhan, A.H., **Al-Zghoul, M.B.** (2020) Embryonic thermal manipulation affects the antioxidant response to post-hatch thermal exposure in broiler chickens. Animals, 10(1). 13. Alzoughool, F.; **Al-Zghoul, M.B**.; Al-Nassan, S.; Alanagreh, L.; Mufleh, D.Atoum, M. (2020) The optimal therapeutic irisin dose intervention in animal model: A systematic review. Veterinary World, 13(10): 2191-2196. 14. **Al-Zghoul, M.B.** and Mohammad Saleh, K.M. (2020) Effects of thermal manipulation of eggs on the response of jejunal mucosae to posthatch chronic heat stress in broiler chickens. Poultry Science, 99(5): 2727-2735. 15. Al-Rukibat, R.; Ismail, Z.; **Al-Zghoul, M.B**., Hananeh, W. (2020) Establishment of reference intervals of selected blood biochemical parameters in Shami goats. Veterinary Clinical Pathology, 49(4): 665-668. 16. Ababneh, M.M.; Hananeh, W.; Bani Ismail, Z.; Hawawsheh, M.; **Al-Zghoul, M.**; Knowles, N.J.van Maanen, K. (2020) First detection of foot-and-mouth disease virus O/ME-SA/ Ind2001e sublineage in Jordan. Transboundary and Emerging Diseases, 67(1): 455-460. 17. Ababneh, M.; Hananeh, W., **Alzghoul, M.** (2020) Mass mortality associated with koi herpesvirus in common carp in Iraq. Heliyon, 6(8). 18. Ababneh, M.; Ababneh, O.; **Al-Zghoul, M.B**. (2020) High-resolution melting curve analysis for infectious bronchitis virus strain differentiation. Veterinary World, 13(3): 400-406. 19. Saleh, K.M.M. and **Al-Zghoul, M.B**. (2019) Effect of acute heat stress on the mRNA levels of cytokines in broiler chickens subjected to embryonic thermal manipulation. Animals, 9(8). 20. Jawasreh, K.; Al Athamneh, S.; **Al-Zghoul, M.B**.; Al Amareen, A.; AlSukhni, I.Aad, P. (2019) Evaluation of growth performance and muscle marker genes expression in four different broiler strains in Jordan. Italian Journal of Animal Science, 18(1): 766-776. 21. **Al-Zghoul, M.B**.; Sukker, H.Ababneh, M.M. (2019) Effect of thermal manipulation of broilers embryos on the response toheat-induced oxidative stress. Poultry Science, 98(2): 991-1001. 22. **Al-Zghoul, M.B**.; Saleh, K.M.Ababneh, M.M.K. (2019) Effects of pre-hatch thermal manipulation and post-hatch acute heat stress on the mRNA expression of interleukin-6 and genes involved in its induction pathways in 2 broiler chicken breeds. Poultry Science, 98(4): 1805-1819. 23. **Al-Zghoul, M.B**. and El-Bahr, S.M. (2019) Basal and dynamics mRNA expression of muscular HSP108, HSP90, HSF-1 and HSF-2 in thermally manipulated broilers during embryogenesis. BMC Veterinary Research, 15(1). 24. **Al-Zghoul, M.B.** and El-Bahr, S.M. (2019) Thermal manipulation of the broiler’s embryos: Expression of muscle markers genes and weights of body and internal organs during embryonic and post-hatch days. BMC Veterinary Research, 15(1). 25. **Al-Zghoul, M.B**.; Alliftawi, A.R.S.; Saleh, K.M.M.Jaradat, Z.W. (2019) Expression of digestive enzyme and intestinal transporter genes during chronic heat stress in the thermally manipulated broiler chicken. Poultry Science, 98(9): 4113-4122. 26. **Al-Zghoul, M.B.** (2018) Thermal manipulation during broiler chicken embryogenesis increases basal mRNA levels and alters production dynamics of heat shock proteins 70 and 60 and heat shock factors 3 and 4 during thermal stress. Poultry Science, 97(10): 3661-3670. 27. Jawasreh, K.I.; Jadallah, R.; Al-Amareen, A.H.; Abdullah, A.Y.; Al-Qaisi, A.; Alrawashdeh, I.M.; **Al-Zghoul, M.B.F.**; Ahamed, M.K.A.Obeidat, B. (2017) Association between MspI calpastatin gene polymorphisms, growth performance, and meat characteristics of Awassi sheep. Indian Journal of Animal Sciences, 87(5): 635-639. 28. **Al-Zghoul, M.B.**; Dalab, A.E.S.; Yahya, I.E.; Althnaian, T.A.; Al-ramadan, S.Y.; Ali, A.M.; Albokhadaim, I.F.; El-Bahr, S.M.; Al Busadah, K.A.Hannon, K.M. (2017) Corrigendum to “Thermal manipulation during broiler chicken embryogenesis: Effect on mRNA expressions of Hsp108, Hsp70, Hsp47 and Hsf-3 during subsequent post-hatch thermal challenge” . Research in Veterinary Science, 114: 525. 29. Al-Rukibat, R.K.; **Al-Zghoul, M.B**.; Hananeh, W.M.; Al-Natour, M.Q.Abu-Basha, E.A. (2017) Thermal manipulation during late embryogenesis: Effect on body weight and temperature, thyroid hormones, and differential white blood cell counts in broiler chickens. Poultry Science, 96(1): 234-240. 30. Al-Ramadan, S.Y.; Ali, A.M.; **Al-Zghoul, M.B**.; Althnian, T.A.Alzayer, M.A. (2017) Macro- and micro-morphological studies on the parathyroid glands of dromedary camel. Pakistan Veterinary Journal, 37(1): 59-64. 31. **Al-Zghoul, M.B**.; Al-Natour, M.Q.; Dalab, A.S.; Alturki, O.I.; Althnaian, T.; Al-ramadan, S.Y.Hannon, K.M. (2016) Thermal manipulation mid-term broiler chicken embryogenesis: Effect on muscle growth factors and muscle marker genes. Revista Brasileira de Ciencia Avicola, 18(4): 607-618. 32. **Al-Zghoul, M.B**.; Ismail, Z.B.; Dalab, A.E.S.; Al-Ramadan, A.; Althnaian, T.A.; Al-ramadan, S.Y.; Ali, A.M.; Albokhadaim, I.F.; Al Busadah, K.A.; Eljarah, A.; Jawasreh, K.I.Hannon, K.M. (2015) Hsp90, Hsp60 and HSF-1 genes expression in muscle, heart and brain of thermally manipulated broiler chicken. Research in Veterinary Science, 99: 105-111. 33. **Al-Zghoul, M.B**.; El-Bahr, S.M.; Al-Rukibat, R.K.; Dalab, A.E.S.; Althnaian, T.A.Al-ramadan, S.Y. (2015) Biochemical and molecular investigation of thermal manipulation protocols during broiler embryogenesis and subsequent thermal challenge. BMC Veterinary Research, 11(1). 34. **Al-Zghoul, M.B**.; Dalab, A.E.S.; Yahya, I.E.; Althnaian, T.A.; Al-ramadan, S.Y.; Ali, A.M.; Albokhadaim, I.F.; El-Bahr, S.M.; Al Busadah, K.A.Hannon, K.M. (2015) Thermal manipulation during broiler chicken embryogenesis: Effect on mRNA expressions of Hsp108, Hsp70, Hsp47 and Hsf-3 during subsequent post-hatch thermal challenge. Research in Veterinary Science, 103: 211-217. 35. **Al-Zghoul, M.B**.; Dalab, A.E.S.; Ababneh, M.M.; Jawasreh, K.I.; Al Busadah, K.A.Ismail, Z.B. (2014) Corrigendum to "Thermal manipulation during chicken embryogenesis results in enhanced Hsp70 gene expression and the acquisition of thermotolerance". Research in Veterinary Science, 96(1): 227. 36. **Al-Zhgoul, M.B**.; Dalab, A.H.S.; Abdulhakeem, E.; Ismail, Z.B.Thanain, A.T. (2013) Arabian Oryx (Oryx leucoryx) trachea: A descriptive and morphometric analysis. International Journal of Morphology, 31(3): 813-818. 37. **Al-Zhgoul, M.B**.; Dalab, A.E.S.; Ababneh, M.M.; Jawasreh, K.I.; Busadah, K.A.A.Ismail, Z.B. (2013) Thermal manipulation during chicken embryogenesis results in enhanced Hsp70 gene expression and the acquisition of thermotolerance. Research in Veterinary Science, 95(2): 502-507. 38. Ismail, Z.B.; Abu-Baker, N.; Alzoubi, K.; **Al-Zhgoul, M**.; Al-Essa, M.K.; Khlouf, S.; Al-Saleh, A.; Al-Omari, B.; Abu-Tayeh, R.; Shomaf, M.; Battah, A.Al-Hadidi, K. (2012) Evaluation of α-d-ribofuranose (d-ribose) toxicity after intravenous administration to rabbits. Human and Experimental Toxicology, 31(8): 820-829. 39. Eljarah, A.; **Al-Zghoul, M.B.;** Jawasreh, K.; Ababneh, M.; Alsumadi, M.; Alhalah, A.Bani Ismail, Z. (2012) Characterization of male reproductive anatomy of the endangered Arabian oryx (Oryx leucoryx). Theriogenology, 78(1): 159-164. 40. **Al-Zhgoul, M**. (2012) Erratum: Evaluation of α-D-ribofuranose (D-ribose) toxicity after intravenous administration to rabbits (Human and Experimental Toxicology 31: 8). Human and Experimental Toxicology, 31(11): 1191. 41. Al-Essa, M.K.; Baker, N.A.; Alzoubi, K.; **Al-Zhgoul, M.B**.; Khlouf, S.; Al-Saleh, A.R.; Al-Omary, B.; Abu-Tayeh, R.; Shomaf, M.; Battah, A.; Al-Hadidi, K.Ismail, Z.B. (2012) Evaluation of the subacute toxic effects of an isotonic d-ribose solution administered intravenously to Fischer rats. Jordan Journal of Pharmaceutical Sciences, 5(2): 111-119. 42. Ababneh, M.M.K.; Dalab, A.E.; Alsaad, S.R.; **Al-Zghoul, M.B**.; Al-Natour, M.Q. (2012) Molecular characterization of a recent Newcastle disease virus outbreak in Jordan. Research in Veterinary Science, 93(3): 1512-1514. 43. 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Ismail, Z.B.; **Alzghoul, M.B**.; Daradka, M.; Al-Shiyab, A.H.Tashman, O.G. (2008) Morphometric measurements of digital bones in juvenile male camels (Camelus dromedarius). Journal of Camel Practice and Research, 15(1): 117-120. 48. **Al-Zghoul, M.B.F**.; Al-Rukibat, R.K.; Talafha, A.Q.; Ababneh, O.Ismail, Z.A.B. (2008) Cellular and some biochemical changes in blood and peritoneal fluid constituents in awassi lambs following elective castration. American Journal of Animal and Veterinary Sciences, 3(1): 23-27. 49. **Al-Zghoul, M.B**.; Al-Rukibat, R.K.; Alghadi, M.; Caceci, T.Bani Ismail, Z. (2008) Distribution and density of mast cells in camel small intestine and influence of fixation techniques. European Journal of Histochemistry, 52(4): 237-241. 50. Bani Ismail, Z.; Al-Rukibat, R.; **Al-Zghoul, M.B**. (2007) Renal and epididymal infarctions associated with chronic obstructive urolithiasis in a suffolk ram. American Journal of Animal and Veterinary Sciences, 2(1): 29-31. 51. Bani Ismail, Z.; Al-Rukibat, R.; Al-Tarazi, Y.; **Al-Zghoul, M.B**. (2007) Synovial fluid analysis and bacterial findings in arthritic joints of juvenile male camel (Camelus dromedarius) calves. Journal of Veterinary Medicine Series A: Physiology Pathology Clinical Medicine, 54(2): 66-69. 52. **Al-Zghoul, M.F.**; Ismail, Z.B.; Al-Rukibat, R.K.Al-Majali, A.M. (2006) A quantitative study on the trachea of young Arabian camels (Camelus dromedarius). Journal of Camel Practice and Research, 13(2): 129-133. 53. Al-Rukibat, R.K.; Ismail, Z.A.B.; Al-Majali, A.M.; **Al-Zghoul, M.B**. (2006) Peritoneal fluid analysis in adult, nonpregnant Awassi sheep. Veterinary Clinical Pathology, 35(2): 215-218. 54. Al-Rukibat, R.K.; Bani Ismail, Z.A.; Al-Zghoul, M.B. (2006) Cytologic analysis of synovial fluid in clinically normal tarsal joints of young camels (Camelus dromedarius). Veterinary Clinical Pathology, 35(3): 326-328. 55. Al-Rukibat, R.K.; **Al-Zghoul, M.B**, Bani Ismail, Z.A. (2006) Physical, biochemical and cytological analysis of synovial fluid of radiocarpal joint of clinically normal young camels (Camelus dromedarius). Journal of Camel Practice and Research, 13(2): 145-147. 56. Taylor, J.; Babbs, C.F.; **Alzghoul, M.B**.; Olsen, A.; Latour, M.; Pond, A.L.Hannon, K. (2004) Optimization of ectopic gene expression in skeletal muscle through DNA transfer by electroporation. BMC Biotechnology, 4. 57. **Alzghoul, M.B**.; Gerrard, D.; Watkins, B.A.Hannon, K. (2004) Ectopic expression of IGF-I and Shh by skeletal muscle inhibits disuse-mediated skeletal muscle atrophy and bone osteopenia in vivo. The FASEB journal: official publication of the Federation of American Societies for Experimental Biology, 18(1): 221-223. | | | | | | | | | | | | | | | | | | | | | | | |
| **Conference Proceedings and Abstracts** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | 1. **Mohammad-Borhan Al-Zghoul**, David Gerrard, Rami Dalloul. Dynamics of cytokines and heat shock proteins mRNA expression in thermally manipulated chicken challenged with intraperitoneally injection of Lipopolysaccharide (LPS). 2020 Experimental Biology. San Diego, USA 2. **Mohammad-Borhan Al-Zghoul**, Effects of thermal manipulation during embryogenesis and post-hatch acute heat stress on the mRNA expression dynamics of cytokines in broiler chickens. 2019 Experimental Biology. Orlando, USA 3. **Mohammad-Borhan Al-Zghoul**, Thermal Manipulation During Broiler Chicken Embryogenesis Increases the Basal mRNA levels of antioxidant factors and Alters Their Production Dynamics during Thermal Stress. 2018 Experimental Biology. San Diego, USA 4. **Mohammad-Borhan Al-Zghoul**, Effect of thermal manipulation during Broiler chicken embryogenesis on the differential expression of Heat shock protein and Factor during heat stress on post-hatch chicken   2017 Experimental Biology. Chicago, USA   1. **Mohammad-Borhan Al-Zghoul**, Thermal Manipulation during Mid-term Broiler Chicken Embryogenesis: Effect on gene expression of Muscle Growth Factors and Muscle Marker Genes. 2016 Experimental Biology. San Diego, USA. 2. **Mohammad-Borhan Al-Zghoul**, Zuhair Bani Ismail , Abd Elhafeed S. Dalab , Abdulla Al-Ramadan, Thnaian A. Althnaian, Saeed Y. Al-ramadan, Abdelhadi M. Ali, Ibrahim F. Albokhadaim, Khalid Ahmed Al Busadah , Abdulhakeem Eljarah , Khaleel I. Jawasreh, Kevin M. Hannon. Hsp90, Hsp60 and HSF-1 genes expression in muscle, heart and brain of thermally manipulated broiler chicken. 2015. Experimental Biology. Boston, USA. 3. **Mohammad-Borhan Al-Zhgoul,** Abd Elhafeed S Dalab, Mustafa M Ababneh, Khaleel IJawasreh, Khalid Ahmed Al Busadah, Zuhair Bani Ismail. Thermal manipulation during chicken embryogenesis results in enhanced HSP70 gene expression and the acquisition of thermotolerance. 2013. Experimetal Biology. Boston, USA. 4. **MB Al-Zghoul**, R.K. Al-Rukibat, Ababneh M., Batieah A. Thermal Manipulation during Late Embryogenesis: Effect on Body Weight and Temperature, Thyroid Hormones and Differential White Blood Cell Count in Broiler Chicks. 2011 American Association of Veterinary Anatomists (AAVA) meeting , Cornell University, College of Veterinary Medicine. 5. **MB Al-Zghoul**, R.K. Al-Rukibat, Abu Basha I, Bani Ismail Z. Effect of thermal Manipulation during Embryogenesis of broiler chicks on muscle growth and muscle marker genes expression. 2010. 2nd African Association of Veterinary Anatomists. Cairo, Egypt. 6. **MB Al-Zghoul**, R.K. Al-Rukibat, Alghadi M, Caceci T, Bani Ismail Z. Distribution and Density of Mast Cells in Camel Small Intestine and Influence of Fixation Techniques. 2008 American Association of Veterinary Anatomists (AAVA) meeting , Texas A&M University, College of Veterinary Medicine. 7. **Al-Zghoul MB**, Bani Ismail Z, Al-Rukibat RK. Detection of Tryptase in the Camel Skin by Immunohistochemistry Using Monoclonal Mouse Anti-human Skin Tryptase antibody. 1st African Association of Veterinary Anatomists. 2008, Cairo, Egypt. 8. Bani Ismail ZA, **AL-Zghoul MB**, AL-Ababneh OM. Serum Levels of Insulin-like Growth Factor-I, Thyroid Hormones, and Skeletal Muscle Fiber Size in Castrated Lambs With and Without Androgen Treatment. The second international scientific conference on small ruminant production, Cairo 2008. 9. **Al-Zghoul MB**, Bani Ismail Z, Al-Rukibat RK, Al- Majali. A Quantitative Study on the Trachea Young Arabian Camels (Camelus dromedaries), Biotechnology and animal production. Cairo University, Faculty of Veterinary Medicine. April, 2005. 10. Bani Ismail Z, **Al-Zghoul MB**, Al- Majali AM, Khraim NM The effect of early castration on penile and urethral development in Awassi lambs. The Deanship of research first scientific day. Jordan 2005. 11. **Al-Zghoul MB** and Hannon K. Ectopic expression of IGH-1 and Shh stimulates muscle hypertrophy and attenuates disuse muscle atrophy. FASEB Summer Research Conference, Tucson, Arizona 2003. 12. **Al-Zghoul MB** and Hannon K. Avian Retrovirus as a vector for gene thereby in young and adult mice. Phi-Zeta, Purdue University, West Lafayette, IN 2002 | | | | | | | | | | | | | | | | | | | | | | | |
| **Funded Research Grants** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | 1. Investigating the effects of IGF-1 and TNF-α on muscle atrophy. Agency: Deanship of Research/ JUST 2005 (7768 USD). 2. Enhancement of Meat Production in meat typed chicken by thermal Manipulation During Embryogenesis. Agency: Deanship of Research/ JUST 2007 (9988 USD). 3. Determination of the normal Distribution and density of mast cells in the Digestive system of the Young Camels (Camillus Dromedaries). Agency: Deanship of Research/ JUST 2005 (4279 USD). 4. Enhancement of Thermotolerance and muscle growth in meat typed chicken by thermal manipulation. Agency: International Foundation for Science (IFS) 2007. (12,000 USD) 5. Determination of the normal Distribution and density of mast cells in the skin of the Young and adult Camels and effects of fixation (Camillus Dromedaries). Agency: Deanship of Research/ King Faisal University 2011 (26700USD). 6. Investigating the Effect of Thermal Manipulation During Early and Late Embryogenesis on the Gene Expression of Heat Shocks Proteins on Broiler Chickens. Agency: Deanship of Research/ King Faisal University 2012 (80,000USD). 7. Seminiferous epithelium cycle length, and daily sperm production and mast cell distribution and male and female reproductive system of the dromedary camel. Agency: Deanship of Research/ King Faisal University 2013 (4800USD). 8. Molecular and Cellular investigation of Skeletal Muscle Tendon and Periosteum Interactions During Recovery from Muscle Atrophy in the Hind limb Suspension Mice Model Mice Mode. Agency: Deanship of Research/ King Faisal University 2014 (2700USD). 9. Using Advanced Molecular and Physiological Approach to Determine the Optimum Temperature, Duration and Period of Thermal Manipulation During the Embryogenesis of Broiler Chicken. Agency: King Abdulaziz City for Science and Technology. 2012 (700,000USD). 10. Investigating Dietary Polyunsaturated Fatty Acid Actions on Endocannabinoid Signaling to Reduce the Incidence of Obesity and Diabetes. Agency: King Abdulaziz City for Science and Technology. 2012 (700,000USD). 11. Effects of chronic heat and cold stress on mRNA expressions of cytokines, HSP70, HSF3 and antioxidant enzymes in thermally manipulated broiler chickens. Agency: Deanship of Research/ JUST 2005 (25781 USD). 12. Investigating the differential expression of heat shook proteins and heat shock factors in the thermally manipulated chicks during embryogenesis and during subsequent thermal challenge in post hatch chicks. Agency: Deanship of Research/ JUST 2016 (42372 USD). 13. Effects of thermal manipulation during broiler chicken embryogenesis on the function of immune system in four broiler strains in Jordan. Agency: Deanship of Research/ JUST 2017 (10593 USD). 14. The effect of thermal manipulation during embryogenesis on the mRNA expression of Anti-oxidative factors stress response in four broiler strains In Jordan. Agency: Deanship of Research/ JUST 2017 (10593 USD). 15. Investigating mRNA expression of digestive enzymes and intestinal transporters genes during acute and chronic heat stress in the thermally manipulated Broiler chicken. Agency: Deanship of Research/ JUST 2017 (9180 USD). 16. he PREDICT project seeks to identify new emerging infectious diseases that could become a threat to human health: USAID/USA 2016 (1,200,000 USD). | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Experience**  **Purdue University (1998-2003)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | BMS 501 Veterinary Anatomy 1  (Role: Teaching assistant)  BMS 502 Veterinary Anatomy 2  (Role: Teaching assistant)    BMS 507 Principles of Cell & Tissue Design 1  (Role: Teaching assistant)  BMS 508 Principles of Cell & Tissue Design 2  (Role: Teaching assistant) | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Experience**  **Al-Zaytoonah University**  **Undergraduate Courses**  0201251 Human Anatomy and Histology  (Role: coordinator)  0201252 Human Anatomy and Histology lab  (Role: coordinator)  **Teaching Experience**  **Jordan University of Science and Technology (2003-Present)**  **Undergraduate Courses** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | VM 218 Veterinary Embryology | | | | | | | | | | | | | | | | | | | | | | |
|  | | (Role: coordinator)  VM 112 Veterinary Anatomy  (Role: coordinator)  VM 114 Practical Veterinary Anatomy I  (Role: coordinator)  VM 215 Practical Veterinary Anatomy II  (Role: coordinator)  VM 232 Veterinary Histology  (Role: coordinator)  VM 399 Practical training  (Role: Applied anatomy and histology rotation) | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Experience**  **Jordan University of Science and Technology (2002-Present)**  **Graduate Courses (master’s degree)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | VM 713 Practical training 1  (Role: Applied anatomy and histology rotation)  VM 713 Practical training 2  (Role: Applied anatomy and histology rotation)  VM 735 Anatomy of small animal  (Role: coordinator)  VM 736 Anatomy of Large animal  (Role: coordinator)  VM 737 Advanced Histology  (Role: coordinator)  VM 733 Surgical Anatomy  (Role: coordinator) | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Experience**  **King Faisal University/ Kingdom of Saudi Arabia (2010-2015)**  **Undergraduate Courses** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | Gross Anatomy 1  (Role: coordinator)  Gross Anatomy 2  (Role: coordinator)  Microscopic Anatomy I  (Role: coordinator)  Microscopic Anatomy II  (Role: coordinator) | | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Experience**  **King Faisal University/ Kingdom of Saudi Arabia (2010-2015)**  **Graduate Courses (master’s degree)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | Advance Histology II  (Role: coordinator)  Camel Anatomy  (Role: coordinator) | | | | | | | | | | | | | | | | | | | | | | | |
|  | |  | | | | | | | | | | | | | | | | | | | | | | | |
| **Graduate Advisor Experience**  **Major Advisor (master’s degree)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | 1. Effect of thermal manipulation during chicken embryogenesis on gene expression of heat shock protein 90 and 60 (HSP90 & HSP60) and heat shock factor-1 (HSF-1). Abdullah Alramadan. May 2014. 2. Thermal manipulation during broiler embryogenesis: Effect on the expressions of heat shock protein 70 (HSP70) andheat shock factor-3 (HSF3**).** Imadeldin Ismail Abdalla Yahya. January 2014. 3. Effect of thermal manipulation during embryogenesis on the expression of Heat shock protein 70 (HSP70) in chicken. Abd Elhafeed S. Dalab, June 2010. 4. The Effect of Thermal Manipulation during Embryogenesis of Body Weight and Thermotolerance Acquisition Post-hatching. Majduleen Ali Sbaihat. March, 2008. 5. The Effect of Thermal Manipulation during Embryogenesis of Broiler Chicks on Muscle Growth and Muscle Marker Gene Expression. Amal Ahmaed M.Salah. December, 2007. 6. Determination of the Normal Distribution and Density of Mast Cells in the Digestive System of the Young Camels (camelus dromedarius). Mu`ath Qasem Al-Gadi. August 2006. | | | | | | | | | | | | | | | | | | | | | | | |
| **Graduate Advisor Experience**  **Co- Advisor and Examination Committees (master’s degree)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | 1. Serum levels of IGF Serum levels of IGF-I and Thyroid Hormones and Muscle Fiber Size in Castrated Lambs with and without Androgen Treatment. Omar Mohammad Qasim Al-Ababneh. July, 2007. 2. Normal Anatomical and Radiological Structures of the Distal Limb of the Juvenile Male Camels. Omar Ghazi Tashman. December, 2006. 3. Effect of Long- and Short-Term Exposure to Cadmium Chloride on Fertility and Renal System in Adult Male Mice. Neveen Anan Mohammed Tbeileh. December 2006. 4. Effect of Early Castration on Penile Development, Urethral Diameter and Accessory Sex Glands in Lambs. Nimer Mhammad Kharim. August, 2005. 5. Study of Faunal Remains from Theater Area-Beit Ras (Capitolias). Jawrneh, R.S,Yarmouk University. December, 2004. | | | | | | | | | | | | | | | | | | | | | | | |
| **Administrative Appointments** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **National Level** | |  | | | | | |  | | | | | | | | | | | | | | | | | | | |
|  | | | 2008-2010 | | | | | | | Evaluation Committee for  Lentivirus Infection and genetic  association with deformities  (National Center for Agricultural  Research and Extension, Ministry  of Agriculture) | | | | | | | | | | | | | | | | | | | |
| **University Level** | |  | | | | | | | | | | |  |
|  | | | 2016-now | | University Quality Assurance committee | | | | | | | | | | | | | | |
|  | | | 2013-2015 | | Standing committee for study plans and curriculum (SC-SPC)  KFU | | | | | | | | | | | | | | |
|  | | | 2005-2006 | | University Council  JUST | | | | | | | | | | | | | | |
| **Faculty Level** | |
|  | | 2019-now | | | | | Faculty Research Committee | | | | | | | | | | | | |
|  | | 2016-2018 | | | | | Higher Education and Research Committee | | | | | | | | | | | | |
|  | | 2016-2019 | | | | | Curriculum Development Committee | | | | | | | | | | | | |
|  | | 2008-2010 | | | | | Higher Education and Research Committee | | | | | | | | | | | | |
|  | | 2008-2010 | | | | | Curriculum Development Committee | | | | | | | | | | | | |
|  | | 2008-2010 | | | | | Scientific Research Committee | | | | | | | | | | | | |
|  | | 2008-2010 | | | | | | | | | | Faculty council | | | | | |
|  | | 2007-2008 | | | | | | | | | | Veterinary Anatomy Museum Reform Committee | | | | | |
|  | | 2007-2008 | | | | | | | | | | Seminar Organization Committee | | | | | | |
|  | | 2007-2008 | | | | | | | | | | Faculty Equipmentation Committee | | | | | | |
|  | | 2005-2006 | | | | | | | | Animal Use and Care Committee | | | | | | |
| |  |  |  | | --- | --- | --- | |  | 2005-2006 | Faculty Equipmentation  Committee | |  | 2004-2005 | Library affairs Committee | |  | 2004-2005 | Faculty Equipmentation  committee | |  | 2003-2004 | Scientific Research Committee |   **Basic Department Level** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | 2003-Present | | Department Council | | | | | | | | |
|  | | | |
|  | | | |  | |  | | | | | | | | |
|  | | | | 2016-2017 | | Equipmentation Committee | | | | | | | | |
|  | | | |  | |  | | | | | | | | |
|  | | | | 2016-2017 | | Curriculum development committee | | | | | | | | |
|  | | 2015-2016 | | | | | | | Curriculum development committee | | | | | | | | | | | | | |
|  | | 2008-2010 | | | | | | Higher Education and Research Committee | | | | | | | | | | | | | |
|  | |  | | | | | |  | | | | | | | | | | | | | |
|  | |
|  | | 2008-2010 | | | | | | Curriculum development committee | | | | | | | | | | | | | |
|  | |  | | | | | |  | | | | | | | | | | | | | |
|  | | 2007-2008 | | | | | | Basic Department Equipmentation Committee | | | | | | | | | | | | | |
|  | | 2007-2008 | | | | | | Higher Education and Scientific research committee | | | | | | | | | | | | |
|  | 2006-2010 | | | | | | | | | | Student Affairs Committee | | | | |
| |  |  |  | | --- | --- | --- | |  | 2005-2006 | Higher Education and Scientific research committee | |  | 2004-2006 | Department Equipmentation  and Library Affairs Committee |   **Short Visits to International Institutions** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | **Developing Veterinary Anatomy Tutorial through Implementing Multimedia and Different Image Facilities**/ Menoufiya University, Egypt 27-29/1/2007.  **Specialized techniques in electron microscopy, including transmission and scanning EM** / Virginia- Maryland Regional College of Veterinary Medicine 27/3-12/4/2007.  **Real Time PCR workshop: Principles and applications.** University of Connecticut /Storrs city/Connecticut/USA Department of Nutritional Science 6/28-8/14 2011.  **Western plot workshop: Principles and applications.** Purdue University /West Lafayette/Indiana/USA Department of Basic Science 6/27-8/14 2014  **Virtual microscope principles and applications**. Carl Zeiss / Munich/ Germany 4-6/6/2015. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Workshops Attended** | | | | | | | |  | | | | | | | | | | | | | | | |  | | | | | | | | | |  |
|  | | **Scientific Writing Workshop**- Purdue University 2000  **Jordan TEMPUS National Day***,* Amman, Jordan, October 9, 2004.  **Advanced Application in University Testing and Evaluation** -JUST 2007  **College Teaching Workshop: Grades and Student Evaluation**- JUST  2008  **Program and Course Description** - King Faisal University (KFU)- October, 2010  **Documentation and Evidence** - King Faisal University (KFU)- January 2011  **Olympus high and Microscopy convention**- 2013-Dammam Kingdom of Saudi Arabia.  **Course report** - King Faisal University (KFU) - March 2015  **E-Learning: Open Educational Resources (OER)** - JUST 2015  **E-learning: Endnote workshop**-JUST 2015  **Applied statistics for Life & Social Science Using R**- JUST 2016  **Emergency Preparedness and Human Safety During Animal Capture for Sampling**. June 2016, PREDICT, Echo health Alliance.  **Safety Training Module Personal Protective Equipment and Hand washing.** June 2016, PREDICT, Echo health Alliance.  **Safety Training Module Review of Zoonotic Pathogens of Bats, Rodents, and Primates.** June 2016, PREDICT, Echo health Alliance.  **Policies and Plans Infectious Waste and Carcass Disposal**. July 2016, PREDICT, Echo health Alliance.  **Packing and Shipping Biological Samples**. July 2016, PREDICT, Echo health Alliance.  **Middle East respiratory syndrome coronavirus (MERS-CoV)** diagnostic workshop. Ministry of Agriculture September 5-6, 2016.  **Middle East respiratory syndrome coronavirus (MERS-CoV)** diagnostic workshop. Ministry of Agriculture September 5-6, 2017.  **Quality of Online Courses- Applying the Quality Matters Rubric**- JUST 2019.  **A collaborative meeting at the Royal Veterinary College (RVC).** January 20-3- 2019 London, UK.  **Biomedical Responsible Conduct of Research-**2021collaborative Institutional Training Imitative (CITI), USA.2021.  **Consultative Meeting on Strategic Guidance for Prevention and Control of Emerging and Re-Emerging Vector-Borne, Zoonotic Diseases** 29 to 31 Jan, 2023.  **Reducing the Threat of Middle East Respiratory Syndrome Coronavirus and Avian Influenza in Jordan & Strengthening Regional Disease Surveillance Capacity**. January 2021, Echo-health alliance Amman.  **Animal Capture for Sampling.** June 2021, Echo-health alliance Amman.  **Ethical Considerations when Conducting Human Research and Data Collection.** June 2021, Echo-health alliance Amman.  **Emergency Preparedness and Human Safety During Animal Capture for Sampling**. June 2021, Echo-health alliance Amman.  **Laboratory Safety**. July 2021, Echo-health alliance Amman.  **Safety Training Module: Personal Protective Equipment and Hand washing**. July 2021, Echo-health alliance Amman.  **Bat and Rodent Sampling Protocol and Cold Chain.** July 2021, Echo-health alliance Amman.  **Survey Design and Risk Communication-** EcoHealth Alliance, NY, USA**.**  Jordan August 10-11th , 2021.  **Microneutralization and pseudoparticle virus neutralization assays for MERS coronavirus.** The National Research Center in Cairo, Egypt from October 31 – November 4th, 2021.  **Technical Workshop to Establish Genomic Surveillance Network in the Eastern Mediterranean Region for Emerging & Re-Emerging Infectious Diseases,** Amman, Jordan. February 1-2, 2023.    **How to design Your Online Course-JUST**- 2023  **Expert Consultative meeting to discuss and validate Regional Strategy for Genomic Surveillance**, Luxor, Egypt, from 25-26 October 2023. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |