# NAME, ADDRESS AND CURRENT POSITION MOHAMMAD S. KHALIFEH, BVSc, M.s., Ph.D., PROFESSOR IMMUNOBIOLOGY

# FACULTY OF VETERINARY MEDICINE FACULTY OF SCIENCE

JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY (JUST)

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# **EDUCATION**

Institution	Degree	Year	Field
Jordan University of Science and Technology	BVM	1995	Veterinary Medicine
Iowa State University	M. S.	1999	Immunobiology
Iowa State University	Ph. D.	2003	Immunobiology

2018-2022	Dean, Faculty of Veterinary Medicine, Jordan University of Science and
2010 2022	Technology (JUST), P.O. Box 3030, Irbid 22110, Jordan
2018-2022	Head, Regional Center of Excellence for Infectious Diseases and
	Antimicrobial Resistance, JUST, P.O. Box 3030, Irbid 22110, Jordan
2018-2022	General Secretory of Arab Association of Veterinary Medical
	Faculties, Association of Arab Universities, P.O Box 401 Amman,
	Jordan
2016-2018	Vice Dean, Faculty of Veterinary Medicine, JUST, P.O. Box 3030,
	Irbid 22110, Jordan2016
2016-2018	Animal House Director, Faculty of Veterinary Medicine, JUST, Irbid
	Jordan
2010-2016	Head, Department of Veterinary Basic Medical Sciences, Faculty of
	Veterinary Medicine, JUST, Irbid, Jordan.
2009-2013	Animal House Director, Faculty of Veterinary Medicine,
	JUST, Irbid Jordan.2009
2009-2010	Assistant Dean, Faculty of Veterinary Medicine, JUST,
	Irbid, Jordan.
2014-present	Professor, Department of Basic Veterinary Medical Science,
	Faculty of Veterinary Medicine, JUST, Irbid, Jordan.
2009-2014	Associate Professor, Department of Basic Veterinary Medical
	Science, Faculty of Veterinary Medicine, JUST, Irbid, Jordan.
2005-present	Joint Appointment, Department of Biotechnology and Genetic
	Engineering, Faculty of Science, Jordan University of Science
	and Technology, Irbid, Jordan.
2004-2009	Assistant Professor, Department of Basic Veterinary Medical
	Science, Faculty of Veterinary Medicine, JUST, Irbid, Jordan.
2003-2004	University Lecturer, Department of Basic Veterinary Medical Science,
	Faculty of VeterinaryMedicine, JUST, Irbid, Jordan.
1999-2003	Research Assistant, National Animal Disease Center, United
	States Department of Agriculture (USDA), Ames, IA, USA.
1997-1999	Research Assistant, Veterinary Medical Research Institutes,
	College of VeterinaryMedicine, Iowa State University, Ames, IA
	USA.
1995-1997	Teaching Assistant, Faculty of Veterinary Medicine,
	JUST, Irbid, Jordan. 1995
1995-1996	Research Assistant, Faculty of Veterinary Medicine,
	JUST, Irbid, Jordan

#### **AWARDS AND HONORS**

1991-1995: Faculty Student Honor List Award, JUST

1997-2003: Graduate Scholarship, JUST

1999-2000: Honor Society of Agriculture Award, Gamma sigma Delta, Iowa State University, Ames, IA, USA.

- 2001 American Association of Veterinary Immunologist Award, St. Louis, MI, USA.
- 2013 Faculty for Factory Program Research grant
- 2012 Showman Organization Research grant
- 2017 Top JUST Professional Consultant from the period of 2012-2017

#### RELATED PROFESSIONAL AND PERSONAL SKILLS AND ATTRIBUTES

- Head of the Core Group for Vaccination Advice, guidance, and Consultation Middle East (Core GVA-ME)established by the European Commission for the Control of Foot-and-Mouth Disease (EuFMD) 2023 present.
- Member of the Core Group for Vaccination Advice, guidance, and Consultation Middle East (Core GVA-ME)- established by the European Commission for the Control of Foot-and-Mouth Disease (EuFMD) 2021 present.
- Member of the research plan focus committee in the national antimicrobial resistance 2023- present
- Member in the national antimicrobial resistance steering committee 2021- present
- Member of the JUST strategic plan (2021-2025) steering committee
- Member of the steering committee that organized the First International Conference on BuildingHuman and Animal Health Capacity 2017 in cooperation with Purdue University, USA.
- Participated in the formulation of a memorandum of understanding (MOU) with different private, national, and international sectors such as
  - MOU with Pirbright Reference Laboratory in London
  - MOU with the Ministry of Agriculture
  - MOU with Merial a multinational animal health company
- Connecting research interests with local industrial needs. For example:
  - Lead the research and development team from 2006 to 2011 at Jordan Bio Industries Center- JOVAC, Amman, Jordan which lead to the improvement of the company's manufacturinglines and the establishment of new products in Veterinary Laboratory diagnostics.
  - Joined the Animal Wellness Product (A.W.P) Company, Reggio Emilia—Italy, as their scientific consultant for the Middle Eastern countries 2014 2017.
- Assigned to several national and international committees in the area of expertise.
  - Assigned by the Jordanian Prime Minster as a member of the Jordanian agricultural higher committee for animal endemic diseases (2009-2012). The main duties of the committee were to investigate and design control plans for the animal disease epidemics in Jordan in order to establish a disease epidemiological map, and plans for diagnosis, prevention, and treatment of infectious diseases in Jordan.
  - Assigned as a member in many epidemic committees for many infectious diseases formed by the Minister of Agriculture to face emergency contagious situations (2012-2018).

- From 2016-2018: a member of many Medical and Animal strategic planning committees.
- From 2017- 2018: a member of the committee that reviewed, developed, and adopted the National Animal Health Strategy 2018-2023 in collaboration with the FAO, the strategic planbased on its previous report on the status of veterinary services in Jordan.
- Participated in the planning and approving of the National Action Plan For AMR in coordination and supervision of the World Health Organization (WHO) and in cooperation and participation of all health sectors in Jordan such as the Ministry of Health, the General Organization for Food and Drug and Royal Medical Services, the Higher Council for Science
- Participated in the Effective Leadership & Multisectoral Collaboration Skills to Address AMR; A
   Capacity-Building Workshop for AMR Multisectoral Coordination Committee Members and Other
   Key Stakeholders organized by WHO 2022
- Assigned to the steering committee of the first Jordan International AgriculturalForum and Exhibition organized by the Jordanian Ministry of Agriculture.
- Participated in the Development of the Strategic Plan to Control FMD in Jordan in 2017 in cooperation with the European Commission for the Control of Foot-and-Mouth Disease (EuFMD), one of FAO's oldest Commissions.
- Participate in the national workshop plan on Bridging OIE Performance of veterinary services (PVS) and international health regulations (IHR) JEE, and development and costing of a national action plan for health Security organized by WHO and the Ministry of Agriculture

#### PROJECTS AND ACTIVITIES

- Preparing Foot and Mouth Disease (FMD) Immunogenicity Assessment Post Vaccination Study in Jordan
   2020-2021 for the Jordanian Ministry of Agriculture
- Scientific Team Member in the project funded by FAO entitled: "Emergency technical assistance to mitigate the impact of Foot and Mouth Disease in Jordan" 2022
- Assigned to National Veterinary Drugs and Biological products registration Committee, Ministryof
  Agriculture (2017 2022). This Committee reviews and evaluates all Veterinary Drugs and Biological
  products including vaccine registration files to ensure their competence with national and international
  regulations.
- Direct a project that establishes continuous services to test and investigate the performance of poultry vaccines and poultry infectious diseases for Jordanian farmers and international vaccinescompanies including Boehringer Ingelheim, ELANCO, Zoetis, and MSD Animal Health (2017- present).
- Lead a project funded by FAO entitled: Raising awareness on judicious use of antibiotics in Jordanto minimize the impact of the global threat of Anti-Microbial Resistance (AMR)". 2019 -2020.
- Scientific Team Member in the project funded by FAO entitled: "Longitudinal and abattoir-based surveillance of MERS-CoV in camels in Jordan Phase 4" 2018
- Scientific Team Member in the project funded by FAO entitled: "Longitudinal and abattoir-based surveillance of MERS-CoV in camels in Jordan Phase 2" 2016
- Supervising the different construction stages for the veterinary surgical hospital (7000sq m) at JUST. The
  project finance is from the United Arab Emirates, Gulf Cooperation Council grant. The hospital will develop
  the capabilities of Veterinary faculty and services in Jordan. 2016 2022

# INVITED AND ATTENDED LECTURES, SEMINARS, AND ORGANIZED WORKSHOPS

- Several workshops on FMD surveillance programs, sample collection, FMD case definition, and vaccination Awareness (2022).
- Webinar presentation about efforts made by the agricultural and veterinary sectors toward raising awareness on the judicious use of antibiotics in animal health at the World Antimicrobials Awareness Week (WAAW) campaign (2020).
- Risk Based Strategic Plan Development, held in Amman Jan 30th –feb 1st, 2018 organized by European Commission for the Control of Foot-and-Mouth Disease (EuFMD), FAO.
- FMD-PCP workshop for development of strategic control plan for Foot-and-Mouth Disease, held in Amman Jan 21st –28th, 2018 organized by European Commission for the Control of Foot-and-Mouth Disease (EuFMD), FAO.
- Attended a Foot-and-mouth disease post vaccination monitoring online training workshoporganized by European Commission for the Control of Foot-and-Mouth Disease (EuFMD), FAO, from Feb 21st –March 15th 2018
- Deliver an Online Training workshop on FMD in Arabic which were organized by EuropeanCommission for the Control of Foot-and-Mouth Disease (EuFMD), FAO. in Arabic from July21st –Aug 20th 2017
- Attended the One Health Consultative Workshop for Development of the National Action Plan on Antimicrobial Resistance for Jordan, Amman, Jordan, 26-29 Nov 2017.
- Keynote speaker at Global policy developments and the regulation of the use of antibiotics in veterinary sector, the reality of antimicrobial resistance and the regulatory assessment of vaccines" World Poultry Science Association (WPSA) Meeting –12th and 13th October 2017 –Beirut, Lebanon
- Keynote speaker at the Avian Flu Forum for Europe, Middle East, Turkey and Africa, Epidemiology
  economic impact and new strategies in controlling Avian Infuenza, Athens Greece April 4th to 6th,
  2017.
- Keynote speaker at Merial Alwatania poultry Institute (WIT) first Academic Partnership, Serological diagnosis of poultry diseases, Saudi Arabia from 12-16 Oct 2016.
- Deliver a workshop for diagnostic tests for specialists and technicians in laboratories, Ministry of Agriculture and Fisheries, OMAN, March, 2016.
- Speaker at Regional Seminar for OIE National Focal Points for Veterinary Laboratories Jordan, 13-15
   December 2016 OIE dead Sea
- Development of Curriculum & Study Plans, 2014. Jordan University of Science and Technology,
   Academic Development and Quality Assurance Center.
- Stakeholder's workshop of the OIE improved program on animal welfare. Jordan 2014.
- Statistical Package for Social Sciences. 2013. Jordan University of Science and Technology, Academic Development and Quality Assurance Center.
- College teaching workshop: Modern teaching strategies. 2013, Jordan University of Scienceand Technology, Jordan.
- Poultry Viral Disease Management through the application of Essential Oil Extract. YemenMinistry of Agriculture. 2013. Yemen.
- Participating in the presentation of the workshop held at Jordan University of Science and Technology

entitled Biosafety and Biosecurity and ELISA manufacturing sponsored by USAID. The workshop was held for training the Pakistanis employers at Defense Science and Technology Organization, Karachi labs compiles. Workshop period was 3 days, 2011.

- JOVAC Workshop on 2010 and 2011, Regency Palace. Amman, Jordan.
- Participating in the presentations for the workshop held at Jordan University of Science and Technology entitled: Quality Control and Assurance main guidelines for vaccine manufacturing sponsored by the Arab Center for the Study of Arid Zones and Dry Lands (ACSAD). The workshop was held for training the Sudanese Agriculture Ministry technical employers Workshop period was 1 week, 2010.
- Participate in the preparatory Committee for the regional workshop on animal welfare in 2009.
- Participate in the Preparatory Committee for the Eighth Veterinary Conference held by the Jordanian Veterinary Syndicate (2009).
- Presentation of three educational and scientific seminars for the public on swine flu (H1N1)immunity
  and vaccination sponsored by the Jordanian Veterinary Syndicate in Amman and Al-karak cities as well
  as by the Jordanian Society for heart patients in the city of Irbid (2009).
- Veterinary Laboratory Agency, VLA international conference on Animal Diseases. 2009. RoyalHolloway, University of London, UK Participated in the presentations for the JOVAC Products Workshops in 2010 and 2011.Amman, Jordan
- Grades and Student Evaluation Workshop. 2005. Jordan University of Science and Technology, Academic Development and Quality Assurance Center.
- Modern Concepts in Teaching and Students Communications Skills Workshop. 2003. Jordan University of Science and Technology, Academic Development and Quality Assurance Center.

#### **ADMINISTRATION STRATEGY AND ACCOMPLISHMENTS**

The administration work accomplishments are continuous and sequential team efforts that would not be possible without the outstanding work of different administration teams. I served as a member of many successful administrative teams that served the veterinary college from 2009 until 2018, after which I was honored to lead an administrative team as the dean of the veterinary college and I am proud of its accomplishments and assistance. Below is a brief summary of the strategic goals and achievements that I focused on during my deanship.

 The first strategic goal: Increase the connection of the veterinary college with the local community, industry, and international organizations, and raise community awareness of the importance of veterinary medicine

# Brief Outcomes:

- Expanding and upgrading the services provided for farmers at the veterinary health clinic
- Increase in the number of students admitted to the college (tripled) through spreading awareness of veterinary medicine importance in the local community through
- continuous organization of free medical open days
- visiting many public and private schools (by veterinary college students) to present and advertise for the veterinary medicine carrier importance
- Using social media to introduce the specialty and fields of work of veterinarians to the public
- Expanding the preparation of students for the local markets, raising their knowledge

- capabilities, and integrating students into the community working environment by holding scientific workshops and extracurricular activities
- Expanding the provision of free services to the local community in cooperation with local and international organizations, which contributed to the increase in the knowledge of the participating students and provided specialized and advanced services to the community
- Expansion in the provision of technical advice and interaction with the local community by faculty members through scientific workshops and participation in several national committees that deal with decision-making in national agricultural and health policies
- The second strategic goal: expanding and strengthening local and international agreements and partnerships

#### Brief Outcomes:

- Ongoing cooperation agreement to support the field veterinary services between the College of Veterinary Medicine and the Ministry of Agriculture.
- Perform and Implement many researches and scientific projects and providing training courses for the Food and Agriculture Organization of the United Nations (FAO), the Arab Organization for Agricultural Development and many other national and international organizations
- Recent negotiation to formalize an MOU with A'Sharqiyah University (ASU), Sultanate of Oman to provide training for their students in veterinary clinical practice at JUST veterinary college.
- The third strategic goal: Raise the efficiency and practical skills of graduates and achieve international and global accreditation

#### • Brief outcomes:

- Improvement of the veterinary medicine (Bachelor's degree) study plan to meet local and international markets' requirements for the College of Veterinary Medicine graduates and ensuring the fulfillment of the requirements for European accreditation from EAEVE, and the recommendations of the Animal Health Organization (OIE).
- Revitalizing the European International Accreditation Pathway (ECVMC) for the Veterinary Specialization of the Association of European Veterinary Colleges (EAEVE).
- Call for a consultation visit to evaluate the preparedness of the veterinary college for full accreditation by EAEVE.
- Affiliation with the American Veterinary Colleges Association (AAVMC).

- Expanding the training opportunities for students in national institutes such as the latest agreement implemented with the King Abdullah II Special Operations Training Center (KASOTC) – K9 division https://www.just.edu.jo/NewsCenter/Lists/JustNews/DisplayItem.aspx?ID=1674
- Creating distinguished and unique clinical postgraduate studies in veterinary medicine.
- This clinical master program in veterinary medicine is different from the current master's
  degree in terms of the duration of the study (3 years) and the type of qualification that
  students will receive in species-oriented clinical training:
- Farm Animal Medicine Clinical Practices.
- Equine Medicine Clinical Practices.
- Small Animal Medicine Clinical Practices.
- poultry health and disease Clinical practices.
- The fourth strategic goal: Improve the college infrastructure.

#### • Brief Outcomes:

- Reaching the final construction stages of the veterinary surgical hospital (7000 sq.m) and currently working on furnishing the hospital with the finest devices and equipment that should develop the capabilities of the veterinary technical services, the quality and preparedness of graduates and achieve international standards for the purposes of international accreditation of JUST veterinary medicine and surgery degree.
- Recent negotiation to formalize an MOU with the ministry of agriculture (MOA) to support the university efforts to provide fund raising to finalize furnishing the veterinary hospital with the required equipment with approximately 1,400,000 JD from the MOA budget. In return the veterinary hospital at JUST should provide advanced veterinary services to the northern governorates and provide continuous education for veterinarians working at MOA. This agreement, if approved, will improve the veterinary services in these governorates, improve the capacity building for the MOA veterinarians and improve the teaching quality of the veterinary college graduates as it will increase the case load at the veterinary hospital.

#### TEACHING EXPERIENCE (2003- PRESENT)

Statement: I have taught in 4 different colleges at Jordan University of Science. I was asked by Hashemite University to teach advance immunology course at the faculty of allied health sciences. I got exposed to not less than 5000 undergraduate students from different specializations and backgrounds. I have taught the college of Veterinary medicine, College of Science & art, College of Medicine, College of pharmacy and College of Applied Medical Science. In addition, I also supervise several master students either as major advisor (32 students), co-advisor (6 students) or member of many examination committees inside and outside the University. The lists of the courses that I taught are presented below.

# **University**: Jordan University of science and Technology.

College: Veterinary medicine. Department: Veterinary Basic Medical Sciences.

	Course title	Course number	Course credits
1	Advanced immunology	VM 752	2
2	Veterinary immunology	VM 341	3
3	Veterinary biochemistry	VM222	4
4	Veterinary virology	VM 342	3
5	Veterinary ethics	VM102	1
6	Practical training for undergraduate students	VM 399	3
7	Practical training for graduate students	VM 713	2
8	Seminar Coordinator for graduate students	VM 791	1

**College**: Science & art. **Department**: Biotechnology & Genetic Engineering.

	Course title	Course number	course credits
1	Advanced immunology	B752	3
2	Immunology for pharmacy students	B439	2
3	Immunology and Serology	B333	3
4	Hybridoma	MB333	2
5	New techniques in biotechnology	BT 372	2
6	Biochemistry	CHEM 262	3

**College:** Allied Medical Science. **Department**: Applied Medical Science.

	Course title	Course number	course credits
1	Diagnostic immunology & serology	LM 333	3
2	Advanced medical microbiology and immunology	LM 731	3

**College:** Medicine. **Department:** Molecular and Medical biochemistry.

Course titleCourse numbercourse creditsMedical biochemistryM2223

**College:** Dentistry. **Department:** Conservative Dentistry.

Course title Course number course credits

Advanced Microbiology and Immunology DENT704 2

# **University:** Hashemite University.

1

College: Allied Health Sciences. Department: Medical Laboratory Sciences.

Course title Course number course credits

Advanced Immunology and Diagnostic Serology MS 732 3

# **University:** Jordan University.

College: Pharmacy. Department: Biopharmaceutics and Clinical Pharmacy

Course title Course number course credits

1 Biochemistry II 1203253 3

# CURRENT RESEARCH INTEREST AND ONGOING PROJECTS (2020- PRESENT)

- Determine the Consensus Sequences Among the Major Structural Proteins of Coronaviruses that can Potentially Serve as B-cell and T-cell Epitopes by Immunoinformatics.
- Investigating the Role of Melatonin and Histamine in Regulating Side Effects of Olanzapine Treatment in Rats
- Investigating the Immunopathogenesis of Avian Pathogenic Escherichia Coli infection during antibiotic treatment
- Improving the inhibitory side effects of olanzapine depressed locomotor activity and immune modulatory effect using hyperbaric oxygen therapy
- The Impact of High dietary carbohydrate and Ghee Consumption on Health and Immunity in Rats.
- Improving health parameters and reducing weight using oxygen therapy in obese rat model.
- AMR surveillance and control
- The effect of rapamycin treatment on wound healing in animal model in presence of hyperbaric oxygen therapy

# PRODUCTIVITY AND EXPERIENCE INDICATORS

	ITEM	TOTAL
•	Publications in Scientific Journals	
	( <a href="https://scholar.google.com/citations?user=nA9WjMMAAAJ&amp;hl=en&amp;oi=ao">https://scholar.google.com/citations?user=nA9WjMMAAAAJ&amp;hl=en&amp;oi=ao</a> )	40
•	Number of citation (google scholar)	782
•	Citation index (google scholar)	14
•	Proceedings/Research Abstracts and Presentations at Scientific/workshops meetings	s many
•	National /International Professional Consultation Projects	9
•	Funded Research Grants	40
•	Amount of Research Funds Awarded (Internal and External)	USD 454,778
•	Academic Honors, Grants and Awards	7
•	Academic Committees	many
•	Courses Teaching Responsibilities	20
•	Graduate Students Supervisor	32
•	Manuscripts in preparation	6