

Mahmoud Mohamed El Sayed Bayoumi

Assistant Lecturer of Virology
Faculty of Veterinary Medicine,
Cairo University,
12211, Giza-Egypt

Present: PhD student,
Division of Biomedical and Life Sciences,
Lancaster University,
Lancaster, LA1 4YG
United Kingdom



E-mail: m.bayoumi@lancaster.ac.uk
mahmoud.bayoumi@cu.edu.eg
bayoumi767@gmail.com

EDUCATION/QUALIFICATIONS

- **Master of Veterinary Medical Sciences (Virology)** **September 2014- 2017**
Department of virology, Faculty of Veterinary Medicine, Cairo University, Egypt
Title of the thesis: **Algal-Based Expression of Hemagglutinin (HA2) Protein of Avian Influenza Virus (AIV): A Step Towards a Universal Vaccine, 2017**
- **Bachelor of Veterinary Medical Sciences** **2008-2013**
Faculty of Veterinary Medicine, Cairo University, Egypt.
Top 1% of class, Excellent every year (5 years).

PROFESSIONAL EXPERIENCE.

- **Assistant Lecturer of virology** **Oct. 2017- Present**
Faculty of Veterinary Medicine, Cairo University, Egypt.
- **Demonstrator of Virology** **December 2014 – Oct. 2017**
Faculty of Veterinary Medicine, Cairo University, Egypt.

ADDITIONAL WORK EXPERIENCE

- **Rabbit farms management** **2012 -May 2014**
Owner for large Rabbit farm, Qalubia, Egypt.
- **Sheep farms management** **2012**
Owner for small sheep farm, Qalubia, Egypt.

ACADEMIC/TEACHING EXPERIENCES

A) Courses taught:

Undergraduate

1. Molecular Biology Course 155 (Practical sessions and lab instructions); **2015-present**
2. General Virology Course 304 (Practical sessions and lab instructions); **2014- present**
3. Veterinary Virology Course 355 (Practical sessions and Lab. instructions); **2014- present**
4. Summer Training Course 357 (Practical sessions and Lab. instructions); **2014- present**

B) Education methods

Teaching methods:

Group discussion, presentation, demonstration, and problem solving.

Teaching Materials:

White boards, transparencies, slides, video projectors, teaching microscopes and web-enabled e-learning.

TECHNICAL AND RESEARCH SKILLS

- DNA/RNA: DNA & RNA extraction (Manual and automatic), real time PCR (Probe-SYPR), Recombinase Polymerase Amplification (RPA, RT-RPA), PCR, RT-PCR, and their clean up, Agarose gel analysis and gel extraction of nucleic acids, nucleic acid sequence analysis using BIOEDIT, SnapGene software, ZEN Confocal software, Cloning and their related Protocols, DNA vaccines, and algae-based vaccines to avian influenza and other molecular based vaccines.
- Virus: Virus isolation and propagation, titration on various tissue culture and ECE.
- Cell culture: Dealing with different types of primary, diploid, and established cell lines (suspension and adherent), Preparation of different types of cell culture media, Virus inoculation on cell culture.

Dealing with different strains of *Chlamydomonas reinhardtii* microalgae cells with preparation of different types of their media, with its maintenance and cultivation and transformation conditions for viral transgenic proteins production.

- Serology and immunology: IFA, Hemagglutination Inhibition assays, Agar Gel Precipitation Test, serum neutralization test and western blot and their analysis.
- Molecular cloning assays, reverse genetics, and Knockout experiments.

LIST OF PUBLICATIONS:

1. **Mahmoud Bayoumi**, and Muhammad Munir (2021). Potential Use of CRISPR/Cas13 Machinery in Understanding Virus-Host Interaction. *Frontiers in microbiology*, 12(Nov):743580
2. **Mahmoud Bayoumi**, and Muhammad Munir (2021). Evolutionary conservation of the DRACH signatures of potential N6-methyladenosine (m⁶A) sites among influenza A viruses. *Scientific Reports*. 11 (1), 1-12.

3. **Mahmoud Bayoumi**, and Muhammad Munir (2021). Structural Insights Into m6A-Erasers: A Step Toward Understanding Molecule Specificity and Potential Antiviral Targeting. *Frontiers in cell and developmental biology* 8(Jan):587108
4. **Mahmoud M Bayoumi**, Mohamed El-Saied, Basem M Ahmed, Magdy El-Mahdy, Haitham M Amer (2021). Gallid Alphaherpesvirus 2 in the Egyptian Turkeys: Molecular Characterization and Establishment of a Universal System for Phylogenetic Classification. *Intervirology*.
5. Salma W. Abdelhaleem, Mostafa M. Bashandy, Shaymaa I. Salem, Faisal A. Torad, Huda O. AbuBakr and **Mahmoud M. Bayoumi** (2021). Synovial fluid analysis of MMP-2, MMP-9, and COX-2 as diagnostic markers for naturally occurring septic and aseptic arthritis in horses. *Comparative Clinical Pathology*.
6. Mohammed A. Rohaim, Emily Clayton, Irem Sahin, Julianne Vilela, Manar E. Khalifa, Mohammad Q. Al-Natour, **Mahmoud Bayoumi**, Aurore C. Poirier, Manoharanehr Branavan, Mukunthan Tharmakulasingam, Nouman S. Chaudhry, Ravinder Sodi, 14 others, and Muhammad Munir (2020). Artificial Intelligence-Assisted Loop-Mediated Isothermal Amplification (AI-LAMP) for Rapid Detection of SARS-CoV-2. *Viruses* 12(9):972
7. **Mahmoud Bayoumi**, Mohammed A Rohaim, Muhammad Munir (2020). Structural and Virus Regulatory Insights into Avian N6-methyladenosine (m6A) Machinery. *Frontiers in cell and developmental biology* 8(July):543.
8. **Bayoumi M**, El-Saied M, Amer H, Bastami M, Sakr EE, El-Mahdy M (2020). Molecular characterization and genetic diversity of the infectious laryngotracheitis virus strains circulating in Egypt during the outbreaks of 2018 and 2019. *Archives of Virology* 165(3):661-670.
9. Basem M. Ahmed, Haitham A. Amer, Jonas Kissen koetter, Ahmed Abd El Wahed, **Mahmoud M. Bayoumi**, Susane Böhlken-Fascher, Mahmoud A. Elgamal, Nahed Yehia, Ausama A. Yousif, Mohamed A. Shalaby (2020). Evaluating two approaches for using positive control in standardizing the avian influenza H5 reverse transcription recombinase polymerase amplification assay. *Molecular and Cellular Probes* 50(Apr): 101511.
10. Rohaim MA, El Naggar RF, Helal AM, **Bayoumi MM**, El-Saied MA, Ahmed KA, Shabbir MZ and Munir M (2019). Genetic Diversity and Phylodynamics of Avian Coronaviruses in Egyptian Wild Birds. *Viruses* 11(1):57-73.

CONFERENCES AND SYMPOSIA

- Attend and participate in the regular Postgraduate symposium of Lancaster University -12 & 13 April 2021, Poster on 13 April 2021.
- Attend and participate in Microbiology society conference. At 26-30 April 2021, Poster on 27 April 2021.
- Organizing and attending the 6th international conference of the Egyptian Society of Virology, Held in Desert rose Hotel-Hurghada, Egypt, 29 November-2 December 2016.
- Organizing and attending and present a lecture regarding Algal expression system in Egypt to viral transgenes at the annual scientific conference of virology department, held in faculty of veterinary medicine, Cairo University, 27-11-2016, entitled " Student needs and participation drive virology department excellence and accreditation, Part 2 "
- The 5th international conference of the Egyptian Society of Virology, Held in serenity makadi Hotel-Hurghada, Egypt, 9-12 December 2014.

- Organizing and attending the annual scientific conference of virology department, held in faculty of veterinary medicine, Cairo University, 26-7-2016, entitled " Student needs and participation drive virology department excellence and accreditation, Part 1 "
- The annual scientific conference of virology department, held in faculty of veterinary medicine, Cairo University, 2012, and I win the second award for proposal in immunology.

ORGANIZATION AND/OR INSTRUCTION AT WORKSHOPS:

- Organizing and attending international workshop under umbrella of Newton-Mosharafa Researcher Links Workshop entitled "Controlling viral infections to improve food security and the nutrition of Egypt's poorest communities" 21st -24th November 2016 held at Cairo University Hostel and Conference Centre. between Virology department Veterinary Medicine and University of Surry, UK.
- "A Practical Tour of Bioinformatics Tools": Making sense of your sequences: from raw sequence data to meaningful sequence information" 29-6-2015. Biotechnology Center for services and research (BCSR), collaborating with virology Department, Faculty of Veterinary Medicine, *Cairo University*. Presented by prof. Dr. Ausama A Yousif, Professor of Virology, faculty of Veterinary medicine, Cairo university and my supervisor.

PRACTICAL TRAINING:

- International publishing, 4-5 October 2016. Faculty and Leadership Development Center (FLDC), Cairo University.
- Recombinase polymerase amplification technique (RPA) at the 6th international conference of the Egyptian Society of Virology, Held in Desert rose Hotel-Hurghada, Egypt, 30 November 2016. Presented by Dr Ahmed abdel wahed Gottingen University, Germany.
- International publishing, 4th September 2016, DAAD Kairo Akademie, Held at Faculty of computers and information.
- Reference management usage in scientific writing, 1st september. 2016, faculty of veterinary medicine, Cairo University, Professor Khaled Mahran.
- University managements, 15-16 August 2016. Faculty and Leadership Development Center (FLDC), Cairo University.
- Scholarly collaboration, 13th July 2016. At the premises of DAAD Cairo, DAAD Kairo Akademie
- Paraphrasing and reviewing literature, 5th April 2016. At the premises of DAAD Cairo, DAAD Kairo Akademie
- Managing time & Meetings, 15-16 February 2016. Faculty and Leadership Development Center (FLDC), Cairo University.
- Effective Teaching Skills, 30 September-1 October 2015. Faculty and Leadership Development Center (FLDC), Cairo University.
- Biostatistics, 25-28 October 2015. Faculty of Veterinary Medicine, Cairo University
- "A Practical Tour of Bioinformatics Tools": Making sense of your sequences: from raw sequence data to meaningful sequence information" 29-6-2015. Biotechnology Center for services and research (BCSR), collaborating with virology Department, Faculty of Veterinary Medicine, Cairo University. Presented by Professor Ausama A. Yousif.
- Exams and Students Evaluation Systems, 19-20 January 2015. Faculty and

- Leadership Development Center (FLDC), Cairo University.
- E-Learning, 15-16 December 2014. Faculty and Leadership Development Center (FLDC), Cairo University.
- Confocal and flowcytometry training at Lancaster University, UK, Dr. Elisabeth Shaw Sept. 2020.
- Biosafety level 3 training at Lancaster University, UK, Dr. Lisa Butler Oct. 2020

PROJECTS:

- Researcher in “Development of a competitive internal positive control (CIPC) to improve the Avian influenza H5N1 rapid detection molecular assay” PI professor M. A. Shalaby (2017-2019)
- “Understanding the Epigenetic Control of Influenza Virus Replication Kinetics, UK” PI Dr. M. Munir 2019-present, PhD studentship.

COMMUNITY SERVICES

- Participation in the field services offered by "Center for Analysis and Applied Studies (CAAS), Faculty of Veterinary Medicine, Cairo University". Task's descriptions include isolation and identification of different animal and avian viruses; serological monitoring of maternal immunity and vaccine responses and vaccine quality control. (2015-2019)
- Participation in the field services offered by "Our faculty hospital outbreaks, Faculty of Veterinary Medicine, Cairo University". Task's descriptions include isolation and identification of different animal and avian viruses, serological monitoring of maternal immunity and vaccine responses and vaccine quality control. (2016-2019)

ACADEMIC/RESEARCH INTERESTS

- I am currently working at Lancaster University, UK. He is doing a research in Animal Science, Virology, Molecular Biology, and Viral epitranscriptome

MEMBERSHIP OF CULTURAL, EDUCATIONAL, AND PROFESSIONAL SOCIETIES:

- Aiding member of teaching staff of Department of virology, Cairo University
- Egyptian Veterinary Medical Syndicate
- Egyptian Society of virology.
- Rabbit team leader at VOTES bright changes, educational model

HONORS

- Egyptian Ministry of higher education and Newton-Mosharafa grant- for full-time PhD studentship in Lancaster university, UK 2019-present.
- Summer school grant that held at Egypt Sept. 2019 - titled “imported and neglected infectious diseases: Joint research forces to fight global problems” supported by Volkswagen Foundation
- Certificate of honor from the faculty of veterinary medicine, Cairo University for Scientific superiority, 2009, 2010, 2011,2012 and 2013 Top 1% of class (excellent) every year.
- Certificate of honor from Egyptian Veterinary Medical Syndicate, graduation day (2013) Third award of the annual virology student conference April 2012 Veterinary Medicine Cairo University.

FOREIGN LANGUAGE ABILITIES/SKILLS

- Arabic: Mother tongue
- IELTS 6.5 (2019)

COMPUTER SKILLS

- Familiar with the following computer software and applications:
 - ICDL course, Syllabus Version 4 (**Pass**)
 - Bioinformatics software (BIOEDIT and Snap gene different versions).
 - ZEN (black and blue) editions for confocal microscopy image analysis.
 - Good at maintaining both hardware and software.

**Mahmoud M. E. Bayoumi,
2021**