

# **Radwa Ewaisha, PhD**

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## **Education**

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- May 2020 – Clinical Chemistry Post-doctoral Fellow
  - Institution: Mayo Clinic, Rochester, MN, USA
- December 2018 – PhD in Molecular and Cellular Biology
  - Institution: School of Life Sciences (SoLS), Arizona State University (ASU), USA.
- December 2016 – Master of Molecular and Cellular Biology
  - Institution: School of Life Sciences (SoLS), Arizona State University (ASU), USA.
- June 2013 – Master of Pharmaceutical Sciences
  - Institution: Faculty of Pharmacy, Alexandria University, Egypt
  - Major: Microbiology and Immunology
- June 2010 – Bachelor of Pharmaceutical Sciences:
  - Institution: Faculty of Pharmacy, Alexandria University, Egypt
  - Grade: Excellent with distinction
    - Junior/Senior GPA: 94.4%, top of my class
    - Undergraduate GPA: 92.3 %, top 5 of my class (top 0.4%)

## **Research and Technical Experience**

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- Currently Assistant Professor of Microbiology and Immunology at the Faculty of Pharmacy Alexandria University, Egypt.
- Trained as a clinical chemistry postdoctoral fellow at Mayo Clinic Rochester. I worked on several research projects, one of which aimed to develop a novel quality control system for the Prostate Health Index (*PHI*), used in the detection of prostate cancer.
- Worked in Dr. Karen Anderson's lab at the Center for Personalized Diagnostics at the Biodesign Institute, ASU during my PhD. My research project focused on identifying biomarkers for the diagnosis and early detection of HPV-associated cancers. I also worked on the characterization of the immune response against CRISPR/Cas9 in humans to create modified versions of this system that are less immunogenic and potentially safer.
- My master's thesis focused on studying antigens that can serve as a potential multi-antigen recombinant vaccine against *Schistosoma mansoni* and a potential diagnostic tool for the infection.

## Research Interests

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- Immunology
- Molecular Biology
- Proteomics
- Microbiology
- Cell Biology
- Clinical Chemistry
- Cancer Immunology and Biomarkers

## Patent

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**Ewaisha, R.**, et al., [Modulating human cas9-specific host immune response](#), 2018 (WO2019018041A1; US11208640B2).

## Publications

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- Ferdosi, S.R.\* , **Ewaisha, R.\*** , et al., *Multifunctional CRISPR/Cas9 with engineered immunosilenced human T cell epitopes*. Nature Communications, 2019. (\*Co-first authors)
- **Ewaisha, R.**, et al., *Serum Immune Profiling for Early Detection of Cervical Disease*. Theranostics, 2017. **7**(16): p. 3814-3823.
- **Ewaisha, R.**, et al., *Abstract 2217: Detection of circulating immune biomarkers of cervical disease using proteome arrays*. Cancer Research, 2017. **77**(13 Supplement): p. 2217-2217.
- Smith, J.T.; Obahiagbon, U.; **Ewaisha, R.** et al. *Future Strategies for Managing Congestion in Heart Failure Patients Using Cardiac Biomarker-Guided Self-Testing*. Journal of Clinical and Experimental Cardiology, 2017. 8(10).
- **Ewaisha, R.**, et al., *Programmable protein arrays for immunoprofiling HPV-associated cancers*. PROTEOMICS, 2016. **16**(8): p. 1215-1224.
- **Ewaisha, R.**, et al., *Inside Front Cover: Programmable protein arrays for immunoprofiling HPV-associated cancers*. PROTEOMICS, 2016. **16**(8).
- **Ewaisha, R.**, C.D. Gawryletz, and K.S. Anderson, *Crucial considerations for pipelines to validate circulating biomarkers for breast cancer*. Expert Review of Proteomics, 2016. **13**(2): p. 201-211.
- **Ewaisha, R.** and K.S. Anderson, *Proteomic Monitoring of B cell Immunity*, in *Vaccine Design: Methods and Protocols*, S. Thomas, Editor. 2016, Humana Press.
- Smith, J.T., Obahiagbon, U., **Ewaisha R.**, et al. *Low-cost, disposable fluorescence-based biorecognition system architecture for multiplexed point-of-care molecular diagnostics*. IEEE Healthcare Innovation Point-Of-Care Technologies Conference (HI-POCT). 2016.

- **Ewaisha, R.E.**, et al., *Successful detection, expression and purification of the alternatively spliced truncated Sm14 antigen of an Egyptian strain of Schistosoma mansoni*. J Helminthol, 2015. **89**(6): p. 764-8.
- Mossallam, S.F., Amer, E.I., **Ewaisha, R.E.**, et al., *Fusion protein comprised of the two schistosomal antigens, Sm14 and Sm29, provides significant protection against Schistosoma mansoni in murine infection model*. BMC Infect Dis, 2015. **15**: p. 147.
- **Ewaisha, R.E.**, et al., *Combination of the two schistosomal antigens Sm14 and Sm29 elicits significant protection against experimental Schistosoma mansoni infection*. Exp Parasitol, 2014. **145**: p. 51-60.

## Presentations

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- The Arab Society for Material Science Annual Meeting December 2021. Talk titled: COVID-19 vaccines: Landscape, successes, and challenges.
- The Pharmaceutical and Healthcare Sciences (PHS) Meeting November 2021. Talk titled: Artificial Intelligence in Immunology: Lessons from Novel Therapeutics.
- The American Association for Clinical Chemistry (AACC) Annual Meeting September 2021. Performance Characteristics of a Theoretical Control Method for the *Phi* index multi-analyte assay with algorithmic analysis.
- The American Association for Clinical Chemistry (AACC) Annual Meeting September 2021. Limited correlation between SARS-CoV-2 serologic assays for identification of high-titer COVID-19 convalescent plasma.
- The Academy of Clinical Laboratory Physicians and Scientists (ACLPS) Annual Meeting May 2021. Heavy Chain Disease Reviewed on MALDI-TOF.
- The American Association for Cancer Research (AACR) Annual Meeting at Washington DC, April 1 – 5, 2017. Detection of circulating immune biomarkers of cervical disease using proteome arrays.
- The AzBio Expo in Tempe, Arizona, March 28 – 29, 2017. Poster title: Multiplexed Detection of immune biomarkers of HPV-associated cancers using proteome arrays.

## Teaching Experience

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- Assistant Professor of Microbiology and Immunology at the Faculty of Pharmacy Alexandria University, Egypt. Courses taught:
  - Immunology (Third-year pharmacy students)
  - Pharmaceutical Biotechnology (Clinical pharmacy program)
  - General Microbiology and Immunology (PharmD program)
  - Advanced Molecular Microbiology (Master's in Microbiology and Immunology program)

- Public Health (Third-year pharmacy students)
- Teaching Assistant for Biochemistry of Cancer (BCH 494/598) at the School of Molecular Sciences, ASU (Spring 2017).
- Teaching Assistant for online Microbiology (MIC 205) and Microbiology Laboratory (MIC 206) at the School of Life Sciences, ASU (Spring 2017).
- Teaching Assistant for Advanced Bacteriology Laboratory (MIC 302) at the School of Life Sciences, ASU (Fall 2014, Fall 2015, Spring 2016).
- Teaching Assistant for Cell Biology online course development at the School of Life Sciences, ASU (Spring 2015).
- Teaching Assistant at the department of Microbiology and Immunology, Faculty of Pharmacy, Alexandria University (September 2010 – August 2014) for the following classes:
  - Pharmaceutical Microbiology laboratory for second year pharmacy students
  - Immunology, Parasitology, Bacteriology, Virology and Environmental Public Health laboratories for third year pharmacy students.
  - Pharmaceutical Biotechnology laboratory for fourth year clinical pharmacy students.
  - Pathology laboratory for third year clinical pharmacy students.

## Scholarships and Awards

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- The Inspiring Global Citizen Award by the ASU International Students and Scholars Office (November 2018).
- The ASU School of Life Sciences Graduate Ambassador Program Fellowship (May 2018).
- The ASU School of Life Sciences Completion Research Assistantship Award (January 2018).
- The ASU Graduate and Professional Student Association (GPSA) Travel Grant (January 2018).
- The Harry Lowell Swift Award for Advancing Human Health (December 2017).
- The ASU Graduate College Travel Award (December 2017).
- The ASU School of Life Sciences Graduate Student Travel Award (December 2017).
- The ASU Students Shine Award (the Culture category) from the Associated Students of ASU (ASASU) Council of Presidents (April 2017).
- The ASU Graduate and Professional Student Association (GPSA) Travel Grant (March 2017).
- The ASU School of Life Sciences Graduate Student Travel Award (March 2017).
- The Edward and Linda Birge Graduate Award (March 2017).
- MSc. fellowship at the department of Pharmaceutical Microbiology, Faculty of Pharmacy, Alexandria University (September 2010 – June 2013).
- Teaching Assistantship at the department of Pharmaceutical Microbiology, Faculty of Pharmacy, Alexandria University (starting September 2010).
- Five certificates of Recognition for the outstanding grades and ranking during the 5 undergraduate years at the Faculty of Pharmacy, Alexandria University (Fall 2005 – Spring 2010).

## Languages

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- Native or bilingual proficiency: Arabic, English.
- Advanced: French.
- Intermediate: German, Spanish

## Mentorship

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Served as a mentor and honors thesis committee member for several undergraduate students at Arizona State University:

- Tirinder K. Bharaj. Honors thesis title: Point-of-Care Testing for Detection of Measles and Mumps Immunity, Barret, The Honors College Thesis, 2017. <https://hdl.handle.net/2286/R.A.184019>
- Ntombizodwa Makuyana. Honors thesis title: Human Papillomavirus specific immune responses as biomarkers for the early detection of cervical cancer, Barret, The Honors College Thesis, 2018. <https://hdl.handle.net/2286/R.I.51550>
- Kathryn Hesser (2016 – 2017).
- Meredith Smith (2017 – 2018).

## Community Service

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- Community outreach talk in Arabic to raise awareness about COVID-19 vaccines. [Vaccines and Variants: COVID-19 Update](#). October 2021.
- Science communication YouTube Videos about COVID [Vaccines](#) and [Variants](#) in English and [Arabic](#).
- Established the Egyptian Student Association at ASU (ESA – ASU) in 2017. Registered the organization as a student club at ASU; updated the student club page including club information, constitution, and officers' information; reached out to Egyptian students at ASU through the international student office to raise awareness; held elections; established a connection with the Egyptian Student Association in North America (ESANA) as a parent association of ESA-ASU; attended information sessions for ASU student club organization and event funding; and obtained ASU funding to organize a dinner event for Egyptian students at ASU to get together.
- Served as President of the Egyptian Student Association at ASU (March 2017 – December 2018).
- Served as Social Officer of the Egyptian Student Association in North America, the largest association for Egyptian students outside Egypt (February 2018 – March 2019). Some of the voluntary work included:

- Helped with the management of the Book Campaign project. This is an initiative that aims to collect donated books and journals from all disciplines as well as PC hardware and software necessary from the U.S. and Canada to be shipped and donated to universities in Egypt.
- Reviewed student applications for both the ESANA Undergraduate and Graduate Excellence Scholarship Awards and selected the recipients for 2018.
- Attended the ESANA General Assembly Meeting and elections at the Egyptian Cultural Bureau in Washington D.C. (February 2018).
- Hosted an [interview](#) with his Excellency the Egyptian Cultural Counselor in the U.S., Prof. Dr. Mohamed Hamza to address the main questions and concerns by Egyptian students in North America.
- Helped organize online meetings and online elections that served to connect the Egyptian scholarly community in the U.S. and Canada and support student associations that represent them.