

AMAL B. HAKA, MAS

Clinical Research | Public Health | Infectious Disease Epidemiology

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ACADEMIC PROFILE

Clinical research and public health researcher with interdisciplinary training in laboratory medicine, infectious diseases, quantitative and qualitative research, and population health. Research experience spans SARS-CoV-2/HLA immunogenetics, refugee and migrant health, hypertension-related health behaviors, antimicrobial resistance, virology, and mixed-methods research. Interested in infectious disease epidemiology, health services research, mass-gathering health, digital surveillance, and data-driven approaches to population health in Saudi Arabia.

RESEARCH INTERESTS

Infectious Disease Epidemiology • Population Health • Health Services Research • Refugee & Migrant Health • Mass-Gathering Health (Hajj & Umrah) • Digital Health & Public Health Surveillance • Behavioral Health • Implementation Science • Mixed Methods • AI-Assisted Health Research

EDUCATION

Master of Advanced Studies (MAS) in Clinical Research

May 2024

University of California San Diego (UC San Diego) | San

Diego, CA, USA

Thesis: "Investigating SARS-CoV-2 Escape Mutations in Common HLA Alleles of the Saudi Arabian Population."

Bachelor of Science in Laboratory Medicine — First Honor

July 2020

Umm Al-Qura University | Makkah, Saudi Arabia

RESEARCH EXPERIENCE

Researcher / Research Assistant

2023–Present

Displacement and Health Research Center (DHRC), UC San

Diego | San Diego, CA / Remote

- Conduct mixed-methods and population-health research focused on Arabic-speaking refugee and migrant communities, including hypertension, complementary and alternative medicine (CAM), health behaviors, and access to care.
- Led a mixed-methods study of CAM use for hypertension among Arabic-speaking refugees in the United States, integrating survey findings with qualitative themes and preparing joint displays and manuscript materials.
- Conduct qualitative transcription, Arabic-English translation, codebook development, thematic analysis, data synthesis, abstract preparation, and collaborative manuscript writing.
- Supported community-based research activities including participant consent, interviews, translation, and study coordination for projects involving underserved populations.
- Contribute to interdisciplinary research meetings and collaborate with investigators and trainees across public health, clinical research, and community health.

Graduate Researcher — SARS-CoV-2 / HLA

2022–2024

Immunogenetics

UC San Diego | San Diego, CA, USA

- Investigated SARS-CoV-2 spike-protein escape mutations across common HLA alleles in the Saudi Arabian population using immunoinformatics and variant data.
- Analyzed HLA alleles A*02:01, B*51:01, and C*06:02 and evaluated epitope-binding changes across major SARS-CoV-2 variants.
- Used IEDB resources, NetMHCpan 4.1, GraphPad Prism, and structured quantitative analysis to assess predicted peptide-HLA binding.
- Developed the work from MAS thesis research into a peer-reviewed publication.

Co-op Researcher

Mar 2021–Mar 2022

King Abdullah International Medical Research Center

(KAIMRC) | Saudi Arabia

- Contributed to research in antimicrobial resistance, virology, COVID-19, bacteriology, parasitology, pathology, whole-genome sequencing, and mRNA-related projects.
- Supported research protocols, laboratory experiments, sample preparation, data collection, interpretation, documentation, and preparation of scientific reports and presentations.

- Collaborated with multidisciplinary researchers and healthcare professionals while maintaining laboratory quality and safety standards.

Research Lab Intern

Jan 2020–Jul 2020

Royal Commission Medical Center | Saudi Arabia

- Supported laboratory medicine research and clinical laboratory operations, documentation, data handling, and patient-related workflows.

PEER-REVIEWED PUBLICATION

Haraka, A. B., Mehta, S. R., & Al-Rousan, T. (2025). Impacts of HLA Genetics on the SARS-CoV-2 Spike Proteins in the Arabian Population. *COVID*, 5(4), 53. <https://www.mdpi.com/2673-8112/5/4/53>

SELECTED RESEARCH PROJECTS

Complementary and Alternative Medicine for Hypertension Among Arabic-Speaking Refugees in the U.S.

Mixed-methods study (N=109) examining CAM use, medication hesitancy, cultural transmission, spirituality, and health behaviors; manuscript submitted to the Journal of Health, Population and Nutrition in 2026.

LLM-Assisted Thematic Analysis / Prompt Engineering in Qualitative Health Research

Collaborative qualitative methods project using seven stroke-survivor interviews to compare prompt-engineering strategies for accuracy, depth, and reproducibility in LLM-assisted thematic analysis.

Hajj & Umrah Population Health Research

Developing a research trajectory focused on mobility, health-seeking behavior, infectious disease surveillance, and predictive approaches to identifying health risks during mass gatherings.

Predominance of Blastocystis hominis Subtypes Among Colorectal Cancer Patients in Makkah

Undergraduate research project in parasitology and laboratory medicine.

CONFERENCE PRESENTATIONS & ABSTRACTS

- International Refugee & Migration Health Conference (2026) — Poster accepted (Abstract ID 139) on CAM use for hypertension among Arabic-speaking refugees.
- North American Refugee Health Conference (2024) — Abstract accepted.
- American Public Health Association (APHA) Annual Meeting (2024) — Roundtable presentation accepted.
- Global Meet on Biotechnology and BioScience (GMBB), Miami, Florida (2023) — Presented research on HLA impact in coronavirus spike proteins in the Arabian population.

RESEARCH METHODS & TECHNICAL SKILLS

Quantitative: R; descriptive and inferential analysis; survey analysis; data cleaning; visualization; GraphPad Prism

Qualitative: Thematic analysis; codebook development; interview/focus-group transcription; Arabic-English translation; mixed-methods integration; joint displays; ATLAS.ti

Bioinformatics / Immunoinformatics: NetMHCpan 4.1; Immune Epitope Database (IEDB); HLA/epitope analysis; viral variant analysis

Research Practice: Literature review; protocol development; informed consent; data collection; manuscript and abstract preparation; Good Clinical Practice; research documentation

Productivity: Microsoft Excel, Word, PowerPoint, Outlook; EndNote

CLINICAL & LABORATORY EXPERIENCE

Laboratory Intern

Jul 2019–Dec 2019

Ministry of National Guard Health Affairs | Saudi Arabia

- Rotated through clinical laboratory areas including microbiology, chemistry, hematology, immunology, toxicology, urinalysis, coagulation, and blood bank.
- Performed specimen processing, quality-control activities, laboratory documentation, and clinical testing under established procedures.

LICENSURE, AWARDS & RECOGNITION

- Saudi Laboratory Licensure Examination (SLLE), Saudi Commission for Health Specialties — Passed, 2021.
- Saudi Scholarship (RWAD), 2022–2026.
- First Honor, BSc in Laboratory Medicine, Umm Al-Qura University.

- Dean's List / Outstanding Academic Recognition, 2016–2019.
- Best Graduation Research Paper, 2019.
- Best Poster Recognition, 2019.

LANGUAGES

Arabic: Native | **English:** Professional / bilingual proficiency

SELECTED ACADEMIC REFERENCES

- Tala Al-Rousan, MD, MPH — University of California San Diego
- Sanjay R. Mehta, MD — University of California San Diego
- Sheldon R. Morris, MD, MPH — University of California San Diego
- Reem Khojah, PhD — Thesis examiner / academic reference