Aga Khan University- FHS-PhD Programme
List of funded projects for potential PhD Candidates

Population & Public Health Stream						
Sr. No.	Name, Email address and Department of Primary Supervisor	Supervisory Team	Title of Project/ Source of funding	Research Funding available	Funds available until	Key Objectives of research project
1	Dr Imran Nisar imran.nisar@aku.edu Asso. Professor, Dept. of Paediatrics & Child Health	Drs Fyezah Jehan, Shifa Habib, Bilal Usmani and Ashar Malik	Maternal Immunization Readiness in Africa & Asia (MIRNA)	USD 550,000	November 2025	The key objectives are: • Identify and implement approaches to assess MI readiness for new vaccines across the health system, including mapping of key regulatory and financing requirements. • Synthesize burden of disease data through systematic literature review and identify systems that could be supported to prospectively capture RSV/GBS disease data. • Synthesize existing work on disease modelling and cost-effectiveness of relevant vaccines in country; identify gaps and undertake additional analyses as needed. • Map professional societies within country and initiate country-based communities of practice for MI. • Identify key individuals in stakeholder groups who can represent country- and context-specific learnings in global consortiums and forums and ensure linkages are strong. • Select, adapt, and apply social science approaches to understand vaccine demand and hesitancy; use findings to develop and test interventions.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): • Minimum two years relevant experience (Public Health) • Strong background with hands-on research on topics related to immunization, health policy and systems, social sciences, economics • Some experience in the following is preferred: stakeholder engagement, study design, data analysis, project management						
2	Dr Imran Nisar imran.nisar@aku.edu Asso. Professor, Dept. of	Drs Fyezah Jehan and Sidrah Nausheen	A Phase II, Randomized, Observer-blinded, Active Controlled Trial to Evaluate the	USD 3.3 million	December 2026	Primary Objectives: • To evaluate the pregnancy related safety events (pregnancy-related Adverse Event of Special Interest (AESI)) and Serious Adverse Event (SAE) among pregnant recipients of 2 doses of Hecolin® administered 4 weeks apart compared to placebo recipients.

	Paediatrics & Child Health		Safety and Immunogenicity of Hecolin® in Healthy Pregnant Women between Gestational Age 14-34 weeks and Non-Pregnant Women of 18 years of age and above			• To demonstrate immune non-inferiority of pregnant recipients compared to non-pregnant recipients of 2 doses of Hecolin® administered 4 weeks apart as measured by the Geometric Mean Concentration (GMC) of anti-HEV IgG at 4 weeks following the second dose. Secondary objectives: • To demonstrate immune non-inferiority of pregnant recipients compared to non-pregnant recipients of 2 doses of Hecolin® administered 4 weeks apart as measured by the Seroconversion rate (antibody response greater than four times or more increase of anti-HEV IgG in paired sera) at 4 weeks following the second dose. • To evaluate the neonatal and infant safety events (neonatal and infant AESI/SAE) among neonates/infants born to recipients of 2 doses of Hecolin® administered 4 weeks apart during pregnancy compared to placebo recipients. • To evaluate the safety events (immediate/solicited/unsolicited) among pregnant recipients of 3 doses of Hecolin® (2 doses administered 4 weeks apart during pregnancy and 1 dose administered after delivery and at least 20 weeks following the second dose) compared to pregnant recipients of 3 doses of placebo. • To demonstrate immune non-inferiority of pregnant recipients of 3 doses of Hecolin® (2 doses administered 4 weeks apart during pregnancy and 1 dose administered after delivery at least 20 weeks following the second dose) compared to non-pregnant recipients of 3 doses of Hecolin® (0, 1 and 6 months) as measured by the i) GMC , and ii) SCR (antibody response greater than four times or more increase of anti-HEV IgG in paired sera) of anti-HEV IgG at 4 weeks following the third dose.

Pre-requisites of PhD candidate applicants (graduate qualification requirement):

- • Master's degree in public health or equivalent (MPH; MSc Epidemiology and Biostatistics) with
- atleast two years relevant experience
- Working knowledge in epidemiological study designs, data analysis, project management, stakeholder engagement

3	Dr Rubina Barolia rubina.barolia@aku.edu Professor, School of Nursing and Midwifery	Drs Faisal Ismail Wasim, Salma Rattani and Pammla Petrucka	Developing and testing of Home-Based Palliative Care intervention (HBPC) using simulation-based training for heart failure patient management in Pakistan	The research s supported from the primary supervisor's endowment funds		The key objectives are: • Describe the views of health care providers regarding needs of palliative care for HF patients • Develop contextual relevant home-based palliative care (HBPC) interventions through simulation-based education for informal and formal care givers • To determine the efficacy of the HBPC intervention on HRQOL and symptoms frequency and distress of HF patients in the intervention group as compared to the HF patients in the attention control group at pre and eight weeks post-intervention via Quality-of-Life Inventory • To determine the following feasibility outcomes of the intervention: acceptability, appropriateness, cost, feasibility, and fidelity
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Understanding of Palliative care and simulation-based learning. Experience in managing heart failure patients						
4	Dr Saleema Gulzar Saleema.gulzar@aku.edu Associate Professor, School of Nursing and Midwifery	Drs Shariq Khoja and Hina Velji,	Beyond the Brick and Mortar, Revolutionizing School Health to Promote Student Wellness through Digital Solutions at Schools in Karachi, Pakistan	PKR 5.5 million	March 2026	The key objectives are: • To re-evaluate and recommend a new scoop for School health promotion by identifying the use of digital health tools & technology, ethical considerations, opportunities and risks and key partners. • To define the role of School Health practitioners/ Nurses in the new Digital School Health field. • To recommend new research and training needs for teachers, nurses and other stakeholders.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Population & Public Health background and experience.						
5	Dr Laila Ladak laila.ladak@aku.edu Associate Professor, School of Nursing and Midwifery	Dr Salman Kirmani	Exploring Experiences, Challenges, and Opportunities in Down Syndrome Care: A Mixed-Methods Study in Pakistan	USD 5000	December 2029	The key objectives are: • Patient and Family Experiences: To explore the lived experiences of children and adults with Down Syndrome and their families, with a focus on challenges, coping mechanisms, and support systems. • Parental Literacy and Impact: To evaluate how parental literacy levels influence their understanding of Down Syndrome, care-

						seeking behaviors, and ability to manage their child's condition effectively. • Health System Analysis: To assess the availability, accessibility, and effectiveness of existing healthcare resources, policies, and practices for individuals with Down Syndrome in Pakistan. • Stakeholder Perspectives: To gather insights from healthcare providers, policymakers, and educators to identify existing gaps, challenges, and opportunities for improving Down Syndrome care. • Intervention and Impact: To develop and implement an educational program for parents aimed at enhancing their knowledge and care practices and to assess its impact on family well-being, parental confidence, and patient outcomes
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Clinical experience in general and dealing with families having children with DS and/or other genetic disorders would be an asset.						
6	Dr Andrew Prendergast andrew.prendergast@aku.edu Visiting Faculty, Department of Peads	Drs Fyezah Jehan, Imran Nisar and Waqasuddin Khan	Nutritional support and prophylaxis of azithromycin for pregnant and lactating women to improve birth outcomes in peri-urban slums of Karachi, Pakistan (Mumta Pregnant Women and Lactating Women Trials)	USD 50,000	December 2026	The key objectives are: • To investigate inflammatory biomarkers and immune dysregulation in malnourished mothers and their infants, examining their role in gut permeability, systemic inflammation, and growth outcomes. • 2. To characterize the relationship between malnutrition and infection by analyzing pathogen load, antimicrobial resistance patterns, and immune responses in pregnant and lactating women, and their infants. • 3. To explore disruptions in key nutrient absorption and metabolic pathways in malnutrition, assessing biomarkers of micronutrient status, intestinal function, and energy homeostasis
Pre-requisites of PhD candidate applicants (graduate qualification requirement): • Minimum two years relevant experience (Public Health) • Strong background with hands-on research on topics related to epidemiology, biostatistics, biological systems, community health, nutrition • Some experience in the following is preferred: stakeholder engagement, study design, data analysis, project management						
7	Dr Zahra Hoodbhoy zahra.hoodbhoy@aku.edu	Drs Emily Smith, Imran Nisar and Fyezah Jehan	Pregnancy Risk, Infant Surveillance, and Measurement	USD 3.6 million	Dec 2025 (There is an extension underway which will be	The key objectives are: • To improve the global understanding of key risk factors or vulnerabilities for morbidity and mortality among pregnant women and mother-infant pairs during antenatal care and postnatal care (up to one year).

	Associate Professor, Department of Peads		Alliance (PRISMA)		finalized by June 2025)	• To provide population-based baseline estimates of key maternal and child health outcomes. This may inform future interventions and randomized trial study designs. • To collect data to enable the application of novel analytical techniques (i.e., machine learning) to create risk prediction tools.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Some experience of MNCH work would be helpful						
8	Dr Jai Das jai.das@aku.edu Associate Professor, Department of Peads and Child Health	Drs Zulfiqar Bhutta Dr Nuruddin Mohammed	Effect of Heat Exposure and Thermal Stress on Maternal, Fetal and Newborn Health (HEaRT): A Cohort Study in Sindh	GBP 2 million	December 2028	The key objectives are: • To determine the impact of environmental heat exposure on pregnancy and birth outcomes • To assess the biological pathways, direct and indirect, through which heat stress affects maternal, fetal, and newborn health across different gestational ages • To evaluate how the sociodemographic factors, maternal characteristics, and nutritional status of women modify the association between heat exposure and adverse pregnancy outcomes
Pre-requisites of PhD candidate applicants (graduate qualification requirement): The applicant should have a strong background in public health, epidemiology, and/or having expertise in laboratory sciences, diagnostics and biomarker analysis, particularly in relation to heat stress and maternal-fetal health. Proficiency in quantitative and qualitative research methods, data analysis (e.g., statistical software like R or STATA), and systematic reviews are essential. Prior research experience in environmental health, maternal and child health, or climate change impacts will be advantageous.						
9	Dr Jai Das jai.das@aku.edu Associate Professor, Department of Peads and Child Health	Drs Zulfiqar Bhutta Dr Nuruddin Mohammed	Assessing the effectiveness of Heat Adaptation & Heat Reduction Interventions for vulnerable population in urban and rural settings of a low- and middle-income country (SHAPES)	GBP 1.7 million	September 2027	The key objectives are: • Evaluate the impact of community-based behavioral and structural interventions on reducing heat-related illnesses, hospitalizations, and all-cause mortality in vulnerable populations. • Examine community perceptions, knowledge, and practices related to heat stress and assess how education and awareness campaigns influence behavior change. • Identify cost-effective and sustainable heat adaptation strategies that can be scaled across urban and rural settings in Pakistan and other LMICs. • Generate evidence to support policy recommendations on climate adaptation, resilience-building, and public health interventions to mitigate heat-related health risks.

Pre-requisites of PhD candidate applicants (graduate qualification requirement): The ideal candidate should have a background in public health with at least 3–4 years of relevant experience. They should have hands-on experience working in an environmental laboratory, conducting data analysis, and interpreting results. Prior experience in climate change and health research would be highly advantageous.						
10	Dr Mohammad Tahir Yousafzai tahir.yousafzai@aku.edu Assistant Professor, Department of Peads and Child Health	Drs Syed Asad Ali and Khalid Rehman	Safety of Rotavirus Vaccine Booster Dose implementation in district Peshawar, Pakistan	USD 3.5 million	December 2027	The key objectives are to: • Evaluate the safety of the rotavirus vaccine booster dose administered at 9 months of age by assessing the risk of intussusception using a self-controlled case series (SCCS) methodology within an established Rotavirus diarrhea surveillance system in Peshawar, Pakistan. • Monitor and assess the occurrence of serious adverse events (SAEs) following the administration of the rotavirus vaccine booster dose at 9 months of age, using sentinel hospital surveillance sites.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Strength in epidemiology and biostatistics, research methods, experience of working with stakeholders including EPI, MoH, experience in hospital-based surveillance, vaccine preventable diseases.						
11	Dr Aysha Almas aysha.almas@aku.edu Professor, Department of Medicine	Drs Zainab Samad, Sameen Siddiqi and Kamran Siddiqui	Cardiovascular Disease Risk Reduction: A comprehensive package for the reduction of risk in Sindh, Pakistan IMPACT, CVD theme	USD 150,000	July 2027	The key objectives are to: • Identify barriers and facilitators influencing patient trust, satisfaction, and compliance. • Evaluate adherence to treatment plans (medications, lifestyle changes) under task-shifted care.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Has research background and interest in NCD research.						
12	Dr Bilal Ahmed Usmani bilal.usmani@aku.edu Assistant Professor, Department of CHS	Drs Zafar Fatmi, Asad Ali, Saqib ur Rehman and Farah Khalid	Malaria in a Changing Landscape: Modeling Transmission, Land Use, and Socioeconomic Factors in Sindh using ML	USD 1.4 million	December 2025	The key objectives are to: • To construct and validate mathematical and ML models that accurately forecast malaria transmission dynamics in Sindh, integrating epidemiological data, geospatial land use information, and socioeconomic variables. • To determine and quantify the significant environmental (e.g., land use changes, climate variability) and socioeconomic (e.g., population density, access to healthcare) factors that influence malaria outbreaks and persistence in the region. • To utilize the developed ML models to assess the potential effectiveness of various malaria intervention strategies, and to

						generate evidence-based recommendations for optimizing targeted control programs in Sindh.
Pre-requisites of PhD candidate applicants (graduate qualification requirement): Prospective PhD applicants should possess a strong foundation in quantitative disciplines such as epidemiology, biostatistics, or data science, coupled with basic knowledge in programming languages like Python or R. Some Experience with machine learning, geospatial analysis using GIS software, and handling large datasets is highly desirable. Candidates should exhibit a keen interest in global health, particularly malaria mitigation, and demonstrate the ability to work collaboratively in an interdisciplinary environment.						