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Research Outlook

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Research Outlook : Issue 6, October 2013

Office of Research & Graduate Studies
Aga Khan University

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THE AGA KHAN UNIVERSITY

RESEARCH OUTLOOK

Issue - 6, October 2013



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Message from the Dean of Research and Graduate Studies



Photograph by Audiovisual Department, AKU

Research Outlook has been re-launched to mark the beginning of a phase where evolution towards a new era is taking place in an atmosphere of intense competition to attain recognition in research. Enormous progress of research in all fields has led to an exponential growth of knowledge bases which require capturing of information most relevant to the developing regions of the world. As the Aga Khan University (AKU) is gradually maturing, it is increasingly challenging to maintain a sustainable pace to uphold high standards of academic and research ethos. At such a crucial time, communication of ideas, knowledge, and dissemination of information are of vital importance, which form the lifeblood of any organisation as diverse and widespread as AKU.

In order to keep AKU's donors, funding agencies, faculty, students, alumni, friends, and the community at large informed about research related activities, events and programmes, it has been decided to publish this bi-annual newsletter. This effort is aimed to provide information about current research related activities undertaken at AKU. Hopefully, this newsletter will serve as a source of information about the current research developments at the University, best practices, successes and

learning, important events, new resources and much more.

AKU has significantly matured as a research and educational institution from its inception more than three decades ago. An overview of this history can be read in the 'In Our Time' article on page 3. Today, there are diverse and complex challenges facing the fields of medicine, social sciences, and humanities. Healthcare reforms, coupled with a serious deficit in global finances, is a challenge to educational institutions as never before. Education methodologies have become a synonym for capacity building in developing countries, and pose a significant milestone in the years to come.

AKU aspires to become a worldwide leader guiding meaningful change in education, including basic, translational and community based biomedical research throughout the biomedical sciences and humanities. The University is experiencing a vast array of exciting advancements due to the relentless efforts of faculty and staff who are collectively working as an unstoppable force driving innovation in the social sciences and healthcare. AKU's future remains vibrant with the promise of discovery and the opportunity to positively impact the lives of many.

Innovative research into new and unexplored frontiers has always been a hallmark of AKU. From medical education to core facilities development to conducting state-of-the-art clinical trials, no stone is left unturned in providing the latest technologies and unwavering support for research activities at the University. Dr Naveed Ahmed Khan's article on page 5 is one of many current endeavours undertaken for solving problems.

The Institute for the Study of Muslim Civilisations (ISMC) brings experts from around the world in the fields of Muslim history, sociology, anthropology, and development. The collective efforts of faculty add to the body of knowledge in its own focussed area. Such diligence and commitment will one day ensure that ISMC has a prominent hand in resolving conflicts and bringing some degree of resolution to the conflicts we see today. Some of their recent contributions can be seen on page 15, which covers book launch ceremonies of a number of their publications.

The AKU Institute for Educational Development (AKU-IED) has proven itself to be a landmark change agent in both the South Asian and East African regions. Through its unique methodology and highly skilled human resources, the AKU-IED has breathed new life into the stale educational curriculum that has scientifically gone out of vogue in Pakistan. Through its graduate and

training programmes, partnerships with leading international educational institutions and providing encouragement and avenues for research, AKU-IED has truly brought a change in the way the profession of education is viewed in the AKU regions. As a result, a new level of respect has been cultivated in society for the contribution of AKU-IED in the educational advancement of underdeveloped nations. An article on their recent events, especially the AKU-IED International Conference, 2012, can be read on page 23.

Readers are encouraged to browse Research Outlook as a way to stay informed, feel inspired, and share news and views in relation to research at the University across all campuses. It is also a good way to stay in touch with colleagues by contributing information that may be relevant.

The Office of Research and Graduate Studies will aim to highlight articles from across the University in order to share them with University community and key stakeholders. For future, AKU is envisioned to be a progressive University with a solid reputation for quality, an international scope, and a strategically secure position amongst the best in the world. AKU's reputation will be earned through world-class, interdisciplinary research in areas where critical mass has been attained, and through selected curricula that generate graduates suited for careers in key programmes and prepared to be productive citizens and leaders. The only way to get there is by culturing a tightly knit community; a well-oiled productivity-centred environment; an aggressive development programme that builds external support; and organisational structures that support AKU's chosen strategic directions.



Photograph by Audiovisual Department, AKU

In Our Time:

The Philosophy and History of the Aga Khan University

'In the beginning, there was an idea'

"That quest for a better life, among muslims and non-muslims alike, must lead inevitably to the knowledge society which is developing in our time."

– His Highness the Aga Khan, December 2, 2006

The year 1983 was a tumultuous time in the history of Pakistan. In the words of Dickens, 'it was the best of times; it was the worst of times'. Muslims, though having a rich history, and culture in education, were anchoring along political lines, rather than educational ones. On one hand, Pakistan was faced with a multitude of social, political, religious and military upheavals while on the other hand, people of vision were taking bold, unprecedented steps to implement a vision for the betterment of the people of the country. One such step was the establishment of an institution of higher education, along the lines of the eminent Al-Azhar and Aligarh Universities, with an ambitious mission: to serve the developing world and Muslim societies in innovative and enduring ways.

His Highness the Aga Khan, the Founder and Chancellor of Aga Khan University (AKU), envisioned an institution that was 'on the frontiers of scientific and humanistic knowledge, radiating intelligence and confidence, research and graduates, into flourishing economies and progressive legal and political systems'—a modern research university, combining Western style and quality of education with Eastern sensibilities, commitments and traditions. Aga Khan University was the implementation of this dream, quickly becoming a national leader in higher education and research: an institution of scholars unafraid to cross boundaries,

share ideas and ask difficult questions.

Global Presence, Local Essence

AKU, through the sea of history, emerged as a distinctive brand of intellectual development, shared not only by Muslims, but across political boundaries and cultural variances. Operating across eight countries in three continents, AKU has grown to incorporate the best community service paradigms from different societies and cultures.

This diversity has added to the strength of the University, creating a synergy that equals greater than the sum of individual parts. As a result, the thrust of interdisciplinary, multicultural, and international research has created unique opportunities for our faculty and students.

Dignity without Prejudice

AKU has had a longstanding commitment to gender equality, in education and employment, and remarkably, considering the ethnically charged atmosphere of Pakistan at the time of its founding, an environment free of sectarianism. The freedom of thought and ability, fairness and impartiality has fostered humanity at AKU in a way that serves as an example to other institutions. This commitment to an accepting environment and equal opportunity distinguished the university in its early years and holds firm today as well.

Leading the Way

AKU was noted by the Higher Education Commission, Pakistan as having the highest cumulative research score in all medical universities in Pakistan^[1]. The biomedical research conducted at AKU

show a zeal for the creation of knowledge at the institutional level^[2] where the creation of knowledge is considered an essential component of academic life at the University.

AKU campuses in East Africa take pride in producing leaders at national and international level, and have developed partnerships with leading global institutions for enhancing quality of service. AKU has invested in developing human potential, which complements the University's existing structures in medicine, nursing and educational development that have been in operation in Kenya, Tanzania and Uganda since 2004, as well as the tertiary care hospital that was established in 1958^[3].

Tradition and Innovation with Style

At the time of designing the AKU building, famous architect Thomas M. Payette asked himself these questions: how do cultural patterns influence spatial organizations? What is the tradition of a hospital or a medical school in an Islamic culture? What are the essential functions of a hospital? As a result, the architecture of the AKU hospital was designed as an extension of the natural environment, in harmony rather than in discord. Concepts such as wisdom, craftsmanship, unity, integration and respect for nature were kept in mind. The result was a synthesis in the design, construction and landscaping of a local medical facility housing a Western educational institution^[4].

All Work and No Play

Quality of life was a new concept in Pakistan, with few adults involved in regular exercise and fitness activities. Much of this was because of the lack of facilities available to the common man in Pakistan's urban environment. AKU's

Sports and Rehabilitation Centre, a one of its kind, purpose built, 12.5 acre site was created for to fulfill this gap.

With state-of-the-art equipment, and a dedication to serving the people, AKU took the first step towards making the lives of ordinary citizens better. Needless to say, this could not have been done without the contribution of the donors, who offered their time, knowledge and money to develop best-in-class resources for the University.

Continuing the Tradition

At AKU, the focus has always been on how to become one in spirit, not necessarily in opinion. The core principle of IQRA, i.e., Impact, Quality, Relevance, and Access is the fundamental concept underlying the development of programmes at the University. The University's commitment to answering that question—and many others—continues to guide it today.

[1] Quality and research based ranking of Pakistani HEIs. Higher Education Commission, 2012, Islamabad.

[2] Karachi: Need stressed to promote research, Dawn, March 29, 2007. <http://archives.dawn.com/2007/03/29/local11.htm> (Accessed: November 27, 2012).

[3] Campuses and teaching sites: East Africa. <http://www.aku.edu/aboutaku/akuataglance/campusesandteachingsites/eastafrica/Pages/home.aspx> (Accessed: June 12, 2013).

[4] Payette, Thomas (1988). Theories and principles of design in the architecture of Islamic societies. The Aga Khan program for Islamic Architecture. pp.161–168.



Photograph by Audiovisual Department, AKU

Cockroaches Can Fight Deadly Infections

Submitted by Dr Naveed Ahmed Khan
Professor & Chair, Dept of Biological & Biomedical Sciences

Who wants to be a cockroach? Well, no one, apparently, though we should really consider it. Given that they have spent nearly four hundred million years in relative peace, surviving environmental changes that have wiped out other species, there is obviously something that we can learn from them. True, the first instinct you get when you see this uninvited pest is generally to step on it, rather than see it for what it really is: a nearly perfect creature.

Little is common knowledge about cockroaches, such as the fact that they can survive as long as 90 days without food and 40 days without water. They can endure for hours without oxygen, and can give birth to up to 40 million offspring in their two year lifespan.

What is most fascinating about these obnoxious insects is that they have been used for centuries for their medicinal properties. From curing earaches, tetanus, ulcers and cancer to use in homeopathic medicine, the scurrying bugs have been considered useful for their healing properties. The latest research hasn't proved this wrong.

Dr Naveed Ahmed Khan, Chair of the Department of Biological and Biomedical Sciences, has discovered that antimicrobials contained in the brains of cockroaches can be very effective in killing superbugs, bacteria that

are resistant to conventional antibiotics, and that too without harming human cells.

What's on a bug's brain?

These visually nasty creatures apparently contain a secret weapon that can guard humans against dangerous superbugs, new research has discovered. Dr Khan and his team tested the brains of cockroaches against the E Coli bacteria that cause meningitis and Methicillin-Resistant Staphylococcus Aureus (MRSA), both diseases that are resistant to antibiotics. Pitting the cells extracted from cockroaches against the bacteria overnight exterminated ninety percent of the bacteria, Dr Khan has discovered, while having no effect on human cells. "Some of these insects live in the filthiest places known to man," says Dr Khan. Therefore it stands to reason that they must have some natural immunization against deadly bacteria. Why does this happen? Cockroaches habitually abide in the most unhealthy and unsanitary surroundings. If they do not have strong protection against bacterial contagion, they would not be able to survive the moist, unclean and decaying environments where they are mostly found.

"What's exciting is that most research has generally been done on plants," said Dr Khan. "Conventionally, when you want a new drug you look into plants because of



Photograph by Audiovisual Department, AKU

their greater biomass that makes it easier to work with them, but we need to think beyond biomass-based research. In the last two years, the FDA has approved only two new antibiotics, and even they are just structural analogues of old drugs. However, here we have a cockroach ... half a brain of a cockroach can kill a million bugs."

As Dr Khan explains, a wide variety of bacteria were found sensitive to these molecules, including, all kinds of gram positive and negative bacteria like pseudomonas, neuropathogenic E Coli, and MRSA. Starting this research at the University of Nottingham in England, he discovered that cockroach brain tissue contains powerful antibiotic constituents, including at least nine separate substances that are poisonous to strains of bacteria that are progressively incurable by antibiotics. The biggest clue that leads scientists towards the brain of cockroaches is that this is the most protected part of their body. Dr Khan and his team hoped that these antibacterial molecules can possibly be synthesized into cures for bacterial infections that are gradually only remediable with medications that cause serious kidney problems.

"...here we have a cockroach ... half a brain of a cockroach can kill a million bugs."

Research also inspected the nervous systems of locusts for the same superbug fighting ability, after noticing that locusts in certain areas of the world were unaffected, while soldiers serving in Asian countries were getting sick because of bacteria that resisted conventional management. "When people complain of fake antibiotics as they do not work as well or as quickly, I tell them the antibiotics are not fakes, they just are not as potent and

able to combat the ever growing number of clever and resistant pathogens." said Dr Khan, talking to the *Express Tribune*, "Regular pathogens can be dealt with [but] the real emphasis [should be on] tackling this growing threat of superbugs."

Impact of this research

It is assessed that infections are the reason behind 70 percent of the deaths of children annually in Pakistan. Also, almost all of the infections affecting people in Pakistan are bacterial.

"Although it may sound idealistic, I genuinely wanted to serve and bring something back to Pakistan ... we may lack the resources, but this [search for new antibiotics] has to be a priority for the government. Terrorism isn't the only problem [facing] Pakistan," he claims. Dr Khan and his team are particularly concerned about the outbreak of untreatable bacteria in hospitals, where patients are at their weakest.

There is a dire need for newer, more effective antibiotics and more lives are being lost every day because little research is being done to discover them. Pakistan has an extensive diversity of cockroach species, which are breeding in naturally unhygienic conditions. Dr Khan expects the bugs here to be extraordinarily active with producing antimicrobials, due to their greater exposure to bacteria and other microorganisms.

Fortunately, Dr Khan and his team have made it their mission to synthesise these for human consumption.

Global Burden of Childhood Diarrhoea Pneumonia

The Genesis of a Global Action Plan

Submitted by Dr Zulfiqar Bhutta
 Founding Director
 Centre of Excellence in Women and Child Health (AKU)

Children are the future of a nation, thus accentuating the national and global stakeholder's obligation to safeguard their health and ensure universal access equitably. Achieving this goal can have far reaching impacts on the society as a whole, not just limited to health. This can build up greater gains and serve as a major catalyst for the prosperity, growth and development of any nation. With this determination, Millennium Summit in September 2000, agreed upon by 190 countries proposed the Millennium Development Goal 4 (MDG 4), to a specific target of reducing under five child mortality by two thirds, by the year 2015.

In 2011, almost 6.9 million children under five died, recording a decrease of 5.1 million from 1990. Despite considerable progress over the last decade, the rate of reduction is less than satisfactory for many countries to achieve MDG 4. The highest burden of child mortality continues to be concentrated in sub-Saharan Africa and South Asia (83%) and with variable coverage of interventions and high birth rates, this gap may continue to widen. Only five countries (India, Nigeria, Democratic Republic of Congo, Pakistan and Ethiopia) are responsible for approximately half of these deaths and 15 countries are responsible for two thirds of the total deaths due to diarrhoea and pneumonia (Table 1). An estimated 4.4 million (58%) of these under five deaths in 2011 were due to infectious causes, of which pneumonia (1.4 million) and diarrhoea (800,000) serve as the two leading causes of post-neonatal deaths (Figure 1). Focused and sustained efforts against pneumonia and diarrhoea, while augmenting nutrition, could save the



Photograph by Farheen Ayub

lives of thousands of children globally. There is evidence for a range of existing interventions which if scaled up, can have far reaching consequences. Of these include; exclusive breastfeeding up to 6 months of age, promotion of complementary feeding, vaccinations, use of oral rehydration solution (ORS) and zinc in diarrhoea, improved case management of diarrhoea and pneumonia, Vitamin A and zinc supplementation. More recently Fischer-Walker et. al. estimated that scaling up a combination of ten interventions for diarrhoea in 68 Countdown countries could reduce diarrhoea specific mortality by 78% by the year 2015. They further estimated a mere cost of US\$0.49 per capita and an additional US\$1.78 per capita if the water, sanitation and hygiene (WASH) interventions were also included. It is also recognised, that many of these direct interventions may have indirect benefits on child survival beyond the specific targeted pathways for reducing deaths and thus

can contribute to even greater gains. Although a global action plan for pneumonia has been in existence for some years, its actual implementation across countries varies considerably. Of the number of countries with high burden of childhood pneumonia, only a few have introduced pneumococcal vaccine and almost none have addressed issues of environmental health and air pollution. Recent findings indicate that only a median of 43% of children in low income countries with pneumonia are seen by an appropriate care-provider and even less than one-third (29%) receive antibiotics.

The Division of Women and Child Health at the Aga Khan University took up the challenge of addressing the issues related to childhood diarrhoea and pneumonia burden and excess mortality. These two disorders alone account for half of all post-neonatal child deaths in Pakistan and over two thirds of all deaths take place at home. The department of Paediatrics and Child Health has had a range of research projects related to global evidence and policy in this field. These projects and research programme date back to the 1980s and at the initiation of research at AKU, diarrhoeal diseases; especially persistent and complicated diarrhoea was a major focus.

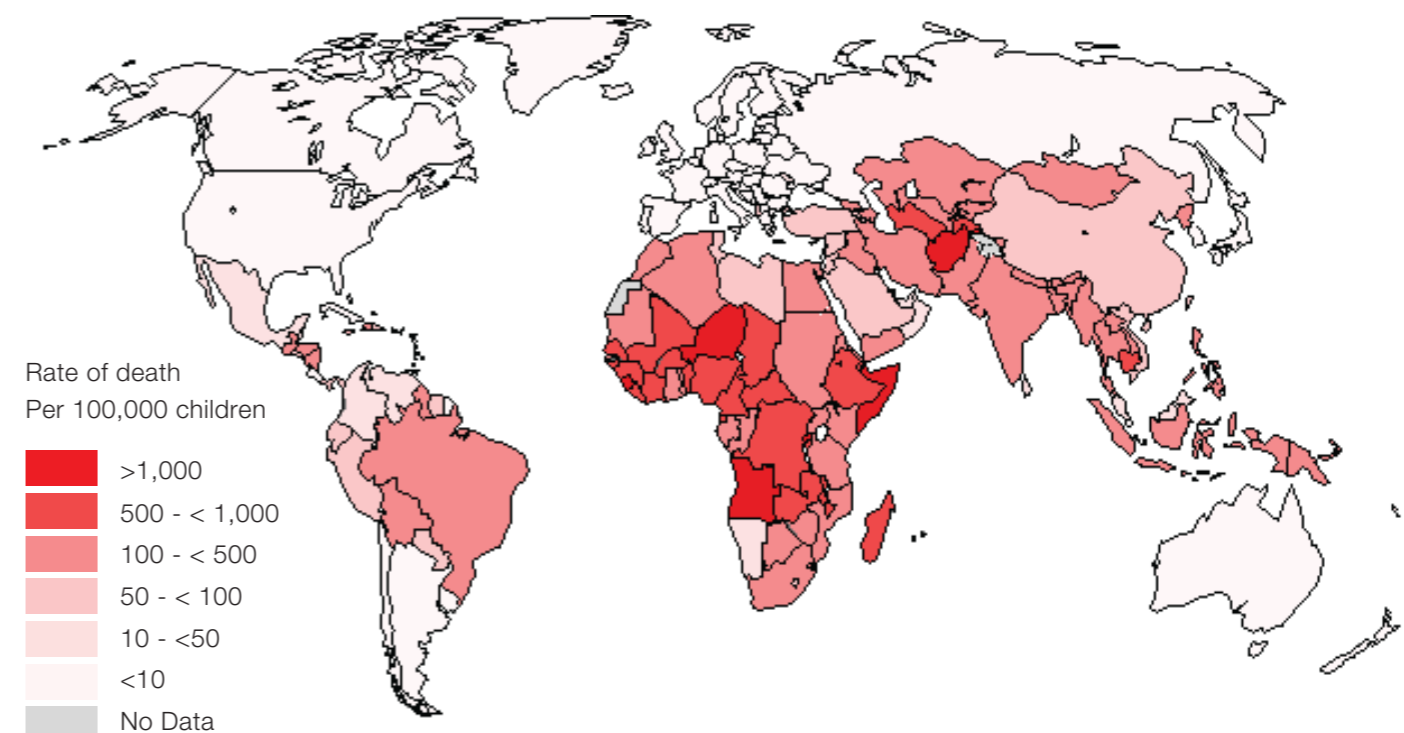
Table 1

Global action plan for diarrhoea and pneumonia - A Roadmap

Rank	Country	Death among children under age 5 due to pneumonia and diarrhoea, 2010
1	India	609,000
2	Nigeria	241,000
3	Democratic Republic of the Congo	147,000
4	Pakistan	126,000
5	Ethiopia	96,000
6	Afghanistan	79,000
7	China	64,000
8	Sudan ²	44,000
9	Mali	42,000
10	Angola	39,000
11	Uganda	38,000
12	Burkina Faso	36,000
12	Niger	36,000
14	Kenya	32,000
15	United Republic of Tanzania	31,000
	Rest of the world	537,000
	Total	2,197,000

Source: "Tackling deadliest diseases for world's poorest children can yield huge gains" – UNICEF

Figure 1 Global action plan for diarrhoea and pneumonia - A Roadmap



Much of the research at that time relates to optimising dietary management strategies. Subsequently the team of investigators and research fellows at AKU IED by Dr Zulfiqar Bhutta played a key role in defining evidence based interventions through robust systematic reviews, and importantly, also in the important area of implementation research. Multiple projects in rural and urban Sindh also focused on delivery strategies to the poorest sectors of the population through Community Health Workers (CHWs) and delivery platforms. These projects generated some of the first evidence for scaling up zinc and low osmolality ORS and also the feasibility of scaling up management of severe pneumonia in domiciliary settings using oral amoxicillin. More recently in a significant breakthrough the integration of diarrhoea treatment and home-based water purification has also been demonstrated.

To expand the work to a global process, Dr Bhutta secured funding from the Bill & Melinda Gates Foundation. The aim of this funding was to plan and organize multiple work groups, a global consensus on research priorities and interventions, to reduce childhood diarrhoea morbidity and mortality, and to develop an integrated action plan for diarrhoea and pneumonia which can be implemented in various contexts and would



Photograph by Farheen Ayub

make a difference in reducing equity gaps (Figure 2). As a first step, a Strategic Advisory Group (SAG) was constituted, which involved eminent researchers representing lead institutions involved in key research and policy areas across countries, to steer and provide specific leadership to various streams of work. This project included a range of activities from developing an inventory of all potential interventions relevant to childhood diarrhoea and possible delivery platforms and estimating their impacts to specific country case studies in seven high burden countries (India, Pakistan, Bangladesh, Vietnam, Kenya, Nigeria and Zambia) (Figure 3).

Table 2 Key areas and major challenges identified from country case studies

Area	Challenges
Policy, strategy and governance	Poor coordination Competing priorities
Funding and resource mobilization	Inadequate funds
Planning, management and coordination	Poor coordination
Human resources	Need for healthcare worker training
Service delivery and referral	Access to services; Health seeking behaviors
Communication and social mobilization	Community engagement
Implementation of WASH	Poor coordination
Supply chain management	Forecasting
Quality of care	Need for healthcare worker training
Monitoring and Evaluation	Data accuracy, completeness and quality
Data in decision making	Data accuracy, completeness and quality
Public private partnership	Partner Coordination
Production and distribution of zinc and ORS	Procurement and production

The work involved all major UN agencies and collaboration with a range of academic partners (Johns Hopkins University, Boston University School of Public Health and Sick Kids Hospital and programme for Global Pediatric Research, Toronto) and organizations such as PATH, Clinton Health Access Initiative and World Vision. The findings and recommendations emerged from these range of interventions reviewed and country case studies (Table 2) will form the development of additional modules for integration of the implementation framework with the Lives Saved Tool (LiST) for a concerted, broad based strategy for decision making and forming the core of the new integrated global action plan for diarrhoea and pneumonia and will also form the basis for a specific series in the Lancet devoted to the subject.

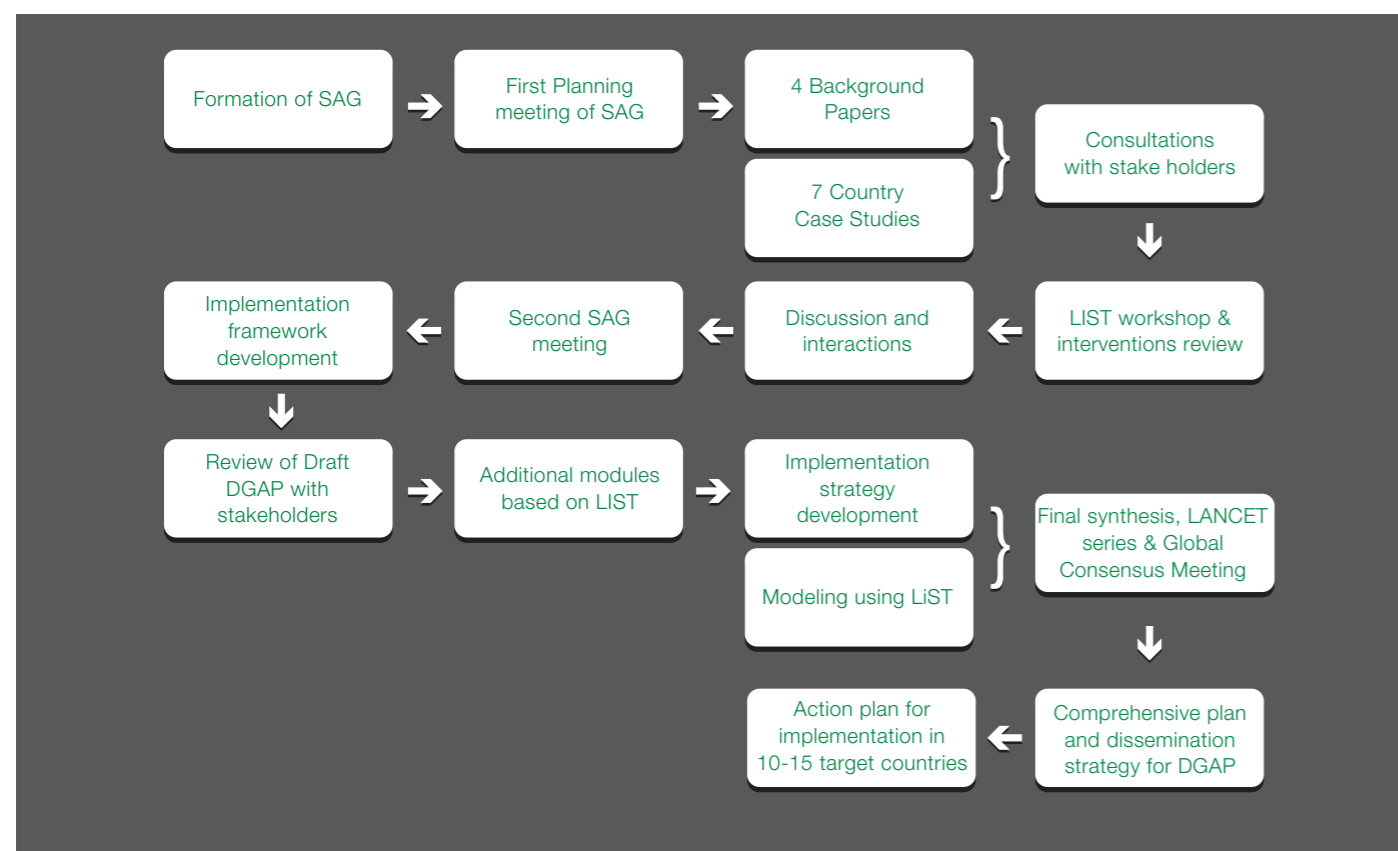
An important message emerging from this exercise is that attaining the MDGs will require universal coverage of key effective, affordable interventions, complemented by strategies to enhance access. Given the shortage of human resources in some of the poorest areas of the world, this will require alternate strategies or platforms to accelerate the uptake and scale up of the proven interventions. One such strategy is reaching out to poor and difficult-to-reach families through CHWs. These CHWs offer a unique opportunity to address a range of preventive and promotive strategies for women and children. Such outreach services and task shifting/task sharing with physicians may offer a unique opportunity to address the MDGs as well as the challenge posed by non-communicable diseases. Such delivery platforms also offer a unique opportunity for integrating services at

the point of service delivery and enabling an implementation strategy in poor and difficult to reach populations. Access to essential drugs and technologies have become a priority for national governments and removal of bottlenecks to address the shortages of critical supplies and commodities, such as ORS and zinc for diarrhoea and amoxicillin for pneumonia and have led to the recent creation of the Commission for Commodities to help improve the supply chain and assure their availability to countries at scale. The private sector also demands attention, as in many high-mortality countries a large proportion of care for childhood illnesses is provided by private sector. Additionally many families seek treatment for diarrhoea and pneumonia from private retail outlets such as pharmacies and drug stores.



Photograph by Farheen Ayub 10

Figure 2 Global action plan for diarrhoea and pneumonia - A Roadmap



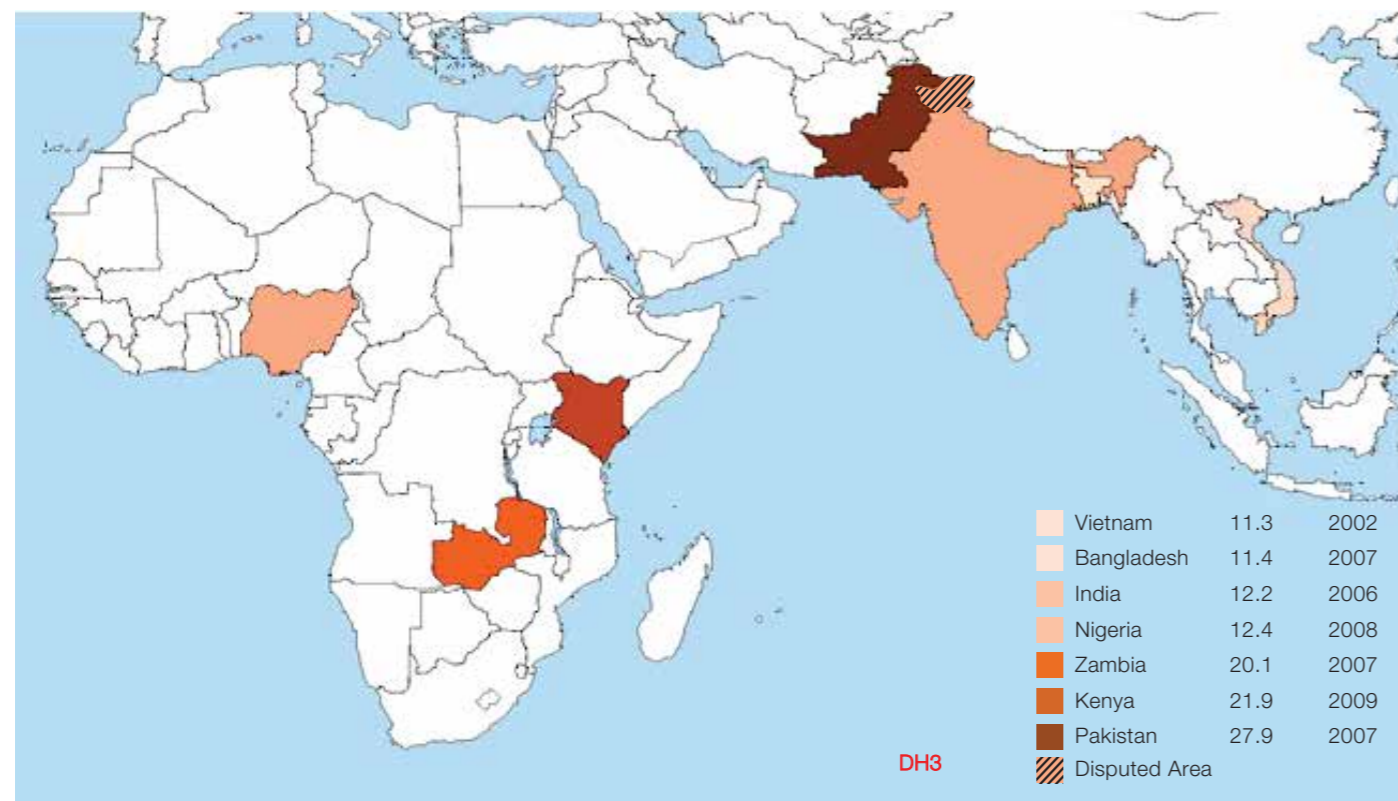
Of the various determinants of burden of diarrhoea and pneumonia, poverty remains a major barrier impeding access to preventive and curative services. There is a clear need to overcome these barriers in enhancing the uptake of services by provision of incentives as well as universal health coverage. It is notable that domestic health funding in 40 Countdown countries is less than 10% of their Gross Domestic Product (GDP), so measures are required to increase the effective state ownership of public health through schemes such as national health insurance programmes, which have been proven a success by a few programmes and are being carried out in other lower income countries like China, India, South Africa, and Columbia and this could prove to be a major scale up of interventions to address childhood diarrhoea and pneumonia and help achieve equity and efficient access to services. It is estimated that comparatively six times more lives could be saved in the poorest households by scaling up key pneumonia and diarrhoea interventions to near universal levels. Bangladesh provides a clear example of how this can be done for newborn health and other complex interventions such as promotion of hand washing, sanitation and clean water.

Only 22 of 75 Countdown countries are on track to achieve MDG 4, while 3 countries have made little or no progress. As we address the emerging global development agenda post 2015, it is important to

underscore that child survival goals remain tenuous. The recent call for action by UNICEF and USAID for reducing global child mortality to 20 or less per 1000 live births by 2035 is a clear opportunity to keep the focus on saving lives and is consonant with the overall goal of eliminating unnecessary diarrhoea and pneumonia deaths. The fact that in many poor communities both disorders have common risk factors and are frequently seen in the same children, lends further credence to the need to integrate diarrhoea and pneumonia strategies.

Given the close link with undernutrition and the opportunity for integrating child survival and development interventions, a renewed global focus on eliminating childhood diarrhoea and pneumonia deaths and reducing morbidity will yield many dividends beyond health. What is needed is the political will and partnerships to make this happen. The key challenge of delivering these integrated and cost-effective interventions to those in greatest need can only be met through concerted advocacy, contextual application of innovations and robust monitoring and evaluation. Both individuals and institutions and members of the global fraternity have a role to play in ensuring that the tangible goal of eliminating diarrhoea and pneumonia deaths is achieved and this global action plan for diarrhoea and pneumonia can pave the way for reaching this goal in the near future and in an organized, coherent and efficient manner.

Figure 3 Countries selected for case studies



Research in the News - 2012

Aga Khan University has been ranked the top medical as well as private university in Pakistan and third overall by the Higher Education Commission (HEC) in its ranking of 136 public and private universities in the country.

- *The Higher Education Commission, Pakistan*

Aga Khan University- SONAM (EA), members of a vocational training team shared their expertise in nursing education with faculty at Aga Khan University's School of Nursing and Midwifery.

- *Rotary International News*

Dr Zulfiqar Bhutta in collaboration with *GAVI CSO Alliance Pakistan*, and the *EPI*, developed a new vaccine to protect children against deadly pneumonia and meningitis which is now being included in the routine immunization programme by Sindh government.

- *Daily Times*

Dr Khanbaghi, editor for the AKU-ISMC Muslim Civilizations Abstracts (MCA) series highlighted the important role of the MCA project in filling a gap in scholarship about Muslim histories and cultures

- *Gulf Times & Jakarta Globe*

Dr Zulfiqar Bhutta, says chlorhexidine umbilical cord care can save newborn lives.

- *USAID Press Release*

Dr Romaina Iqbal, over 100 press releases of a paper titled "Physical activity levels, ownership of goods promoting sedentary behavior and risk of myocardial infarction: Results of the INTERHEART study" were published in the World wide links.

- *Business Week Bloomberg Report*

Dr Jaweed Akhter, screening is essential for diabetes prevention.

- *The Nation*

Dr Shehla Zaidi & Dr Zulfiqar Bhutta, It's sunny in Sindh yet mothers and children have Vitamin D deficiencies.

- *The Express Tribune*



The Clinical Trials Unit

From Construction to Operations

Submitted by Dr Azizunissa Irumnaz
Director, Clinical Trials Unit



Photograph by Audiovisual Department, AKU

The Clinical Trials Unit (CTU) at the Aga Khan University commenced operations in 2011, in a new purpose built facility spreading over 7400 square feet, rejuvenating the concept envisioned over a decade ago. Due to the complexities and the sensitive nature of the processes and procedures undertaken, CTUs around the world have developed a negative connotation. AKU CTU strives to overcome this impression by living up to the uncompromising mission and vision of the University. Conforming to AKU's vision and research mandate, the CTU is dedicated to developing a reputation for high quality and impact in clinical trials both nationally and internationally. The CTU offers consultation and facilitation in different phases of clinical trials in line with meeting international standards, especially the Good Clinical Practice (GCP) guidelines. Four major strategic directions of the CTU include Knowledge Network and Learning, Advocacy and Leadership, Infrastructure Development, and Clinical Trial Management.

The CTU encourages AKU faculty, residents and students from all disciplines to engage in trial-related activities to foster and support a culture of research at AKU. Facilitation begins from the time an idea is conceived right up to the time the study is completed. Support includes both individual and group consultations on protocol development, trial budgeting, operational feasibility, clinical and administrative management of the

trial and specimen and investigational product management, in compliance with GCP and other regulatory guidelines. Over the last four years, CTU has reviewed multiple trial protocols related to excellence in its sphere of influence (Figures 1 & 2).

Research interest has grown significantly during the past few years. With this growth, it is very promising to note that there is positive growth in investigator initiated trials, which reflects an increasing awareness amongst the faculty, students etc. To further its mandate CTU has developed over 50 Standard Operating Procedures (SOPs), process flows, and templates for protocol writing, informed consent, assent, checklists, and logs in compliance with GCP guidelines. These guidelines are based on the Declaration of Helsinki, for the protection and safety of human subjects participating in clinical trials which are mandatory. A two day workshop was organized in March 2012 for study coordinators, and in July of the same year for the investigators. Participants were not only from AKU, but also from many other academic and research institutions, pharmaceutical companies and Clinical Research Organisations (CRO). Topics such as research ethics, developing informed consent form, regulatory and legal perspectives, specimen and drug management, roles and responsibilities of the study team and regulatory requirements were covered by renowned national and

Figure 1

Clinical Trials & Observational Studies reviewed from 2008-2012

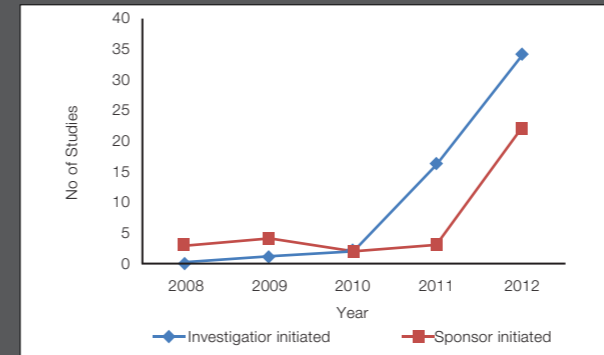
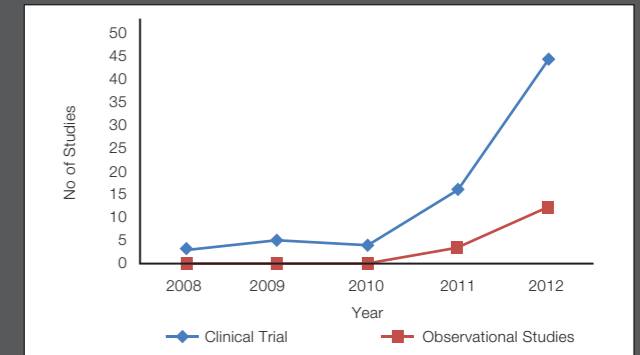


Figure 2

Number of Investigator & Sponsor initiated trials during 2008-2012



international experts. The participants appreciated different strategies used during the two workshops, and feedback was very encouraging. Furthermore, a protocol development workshops led by the Association for Cooperative Operations Research and Development (ACORD) faculty, awareness and developments sessions to pharmaceuticals, CROs and AKU departments were also conducted.

The University always looks towards introducing highest quality mechanisms according to its mission, vision, and doctrine, in order to resolve localised challenges within an international ethical framework.

CTU has been striving to strengthen the processes and practices at AKU specifically and generally in Pakistan.

CTU has developed over 50 Standard Operating Procedures (SOPs) related to clinical trials in the institution to enhance regulatory compliance. By establishing different systems, such as the Patient Registration, Laboratory and Pharmacy systems for clinical trial patients, the CTU has benefited patient welfare within the institution.

In its quest for the betterment and advancement of clinical trials, CTU's upcoming initiatives include the development of a data management system, adverse events reporting system and on-going capacity building workshops. The CTU is in its infancy phase, but with the unconditional support provided by the institution's senior management and faculty, CTU promises to fulfil its overarching objective of making healthcare better.

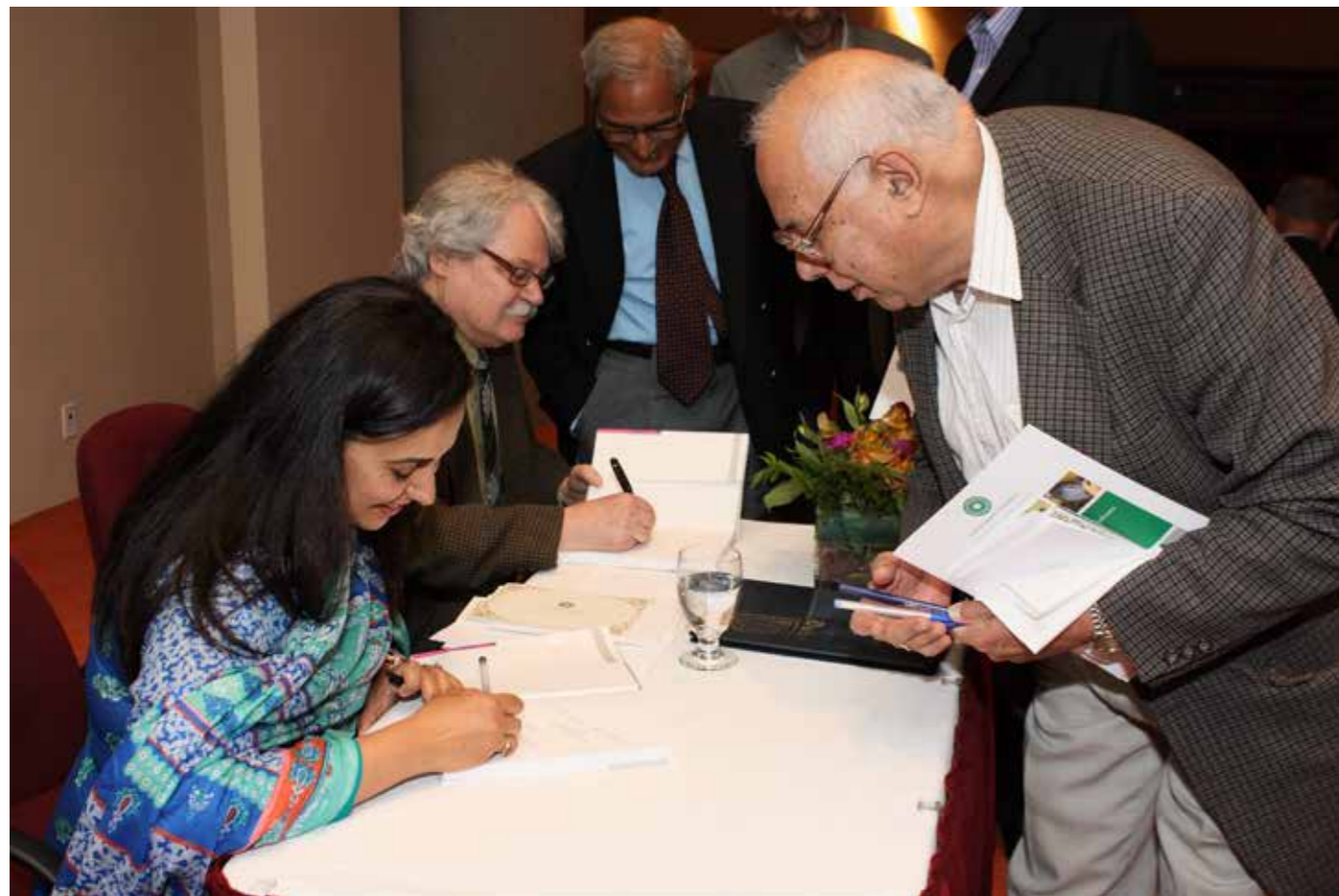


Photograph by Audiovisual Department, AKU 14

Book Launch: Putting an Imprint on Ideas

AKU-ISMC Publications make their Mark

Submitted by Dr Kathryn Spellman-Poots
Associate Professor (AKU-ISMC)



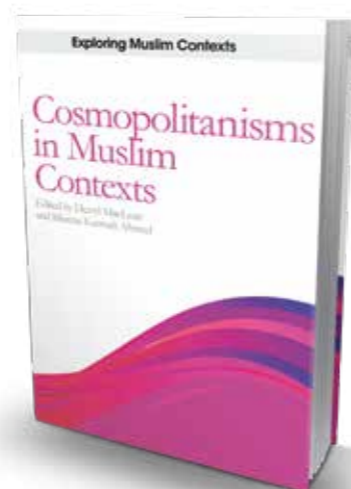
Photograph by Karim Virani

Title **Cosmopolitanisms in Muslim Contexts: Perspectives from the Past**

Edited by: Derryl MacLean and Sikeena Karmali Ahmed

This work focuses on instances in World history when cosmopolitan ideas and actions pervaded specific Muslim societies and cultures. The text further explores the tensions between regional cultures, isolated enclaves and modern nation states. Models are chosen from four geographic areas: the Swahili coast, the Ottoman Empire/Turkey, Iran and the Indian Subcontinent.

Launch: July 18, 2012 at the Ismaili Centre in Burnaby, Vancouver

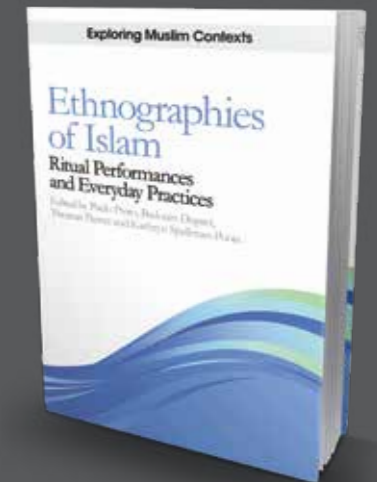


Title **Ethnographies of Islam, Ritual Performances and Everyday Practices**

Edited by: Baudouin Dupret, Thomas Pierret, Paulo G. Pinto, and Kathryn Spellman-Poots

The book highlights the importance of ethnography in the study of Islam. Topics include the preparations for performing the Hajj, or pilgrimage to Mecca, among Tunisians, the transformation of mourning and funeral practices in the Syrian countryside and a collective ritual prayer in Saharan Algeria.

Launch: September 27, 2012 at AKU-ISMC, London

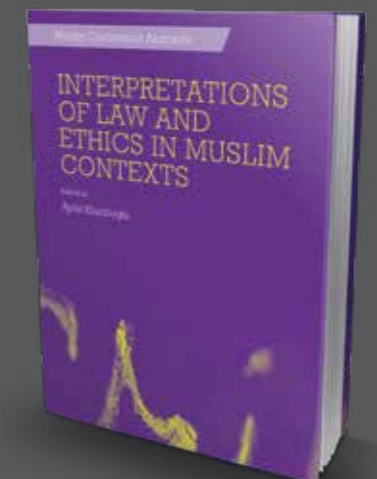


Title **Interpretations of Law & Ethics in Muslim Contexts**

Edited by: Aptin Khanbaghi

This book explains that law within Muslim societies is far from uniform, partly because Muslim societies extend over three continents, from the Atlantic to the Pacific Ocean. However, even within Muslim majority regions, the law can be interpreted differently according to the respective denominations and legal traditions.

Launch: May 31, 2012 at the Ismaili Centre in London



Book Reviews

Aga Khan University Institute for Educational Development, Pakistan

Submitted by Dr Dilshad Ashraf
Assistant Professor & Head RAPS (AKU-IED, Pakistan)

Title

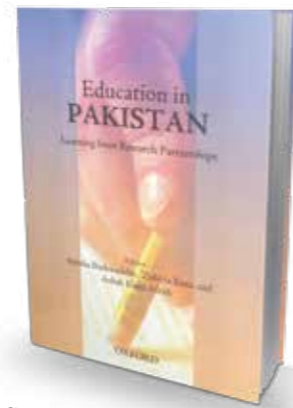
Education in Pakistan: Learning from Research Partnerships

Editors: Ayesha Bashirudin, Zubeda Bana and Arbab Khan Afridi

This book is a compilation of empirical research conducted by the faculty of Aga Khan University Institute for Educational Development (AKU-IED), Pakistan and the Institute for Education and Research Peshawar University (IER-PU).

The book addresses three themes of which the first is centered around research conducted to explore school based issues, such as teaching English grammar, large classes, school improvement initiatives, and leadership and management practices at public schools. The second theme includes research projects which examined challenges and issues related to teacher education. These chapters discuss matters related to teaching practicum and innovative teaching strategies. The third theme in the book takes lessons from research in higher education. Quality assurance in higher education and graduate students' perspectives about their experiences are the two major concerns highlighted in these chapters.

The book concludes with insights from editors into the opportunities and challenges of establishing research collaborations within academia. This book is a significant contribution to the body of knowledge around educational matters in Pakistan and, hence, is an important reference for academicians, researchers, practitioners and policymakers alike.



Title

Multidisciplinary Approaches to Educational Research:
Case Studies from Europe and Developing World. UK: Routledge Research in Education.

Editor: Sadaf Rizvi

This book provides an unprecedented perspective on the contentious challenges in conducting educational and social research. This is done through discussing a series of case studies of multidisciplinary and mixed-method research involving children, teachers, schools and communities participation in Pakistan and UK. Contributors from a range of disciplines such as anthropology, sociology, education, economics, health and social care, and human geography.

This book shares the first-hand experiences of using multidisciplinary and mixed-method approaches in educational settings and provide reflections on their application, usefulness and limitations in varying contexts.

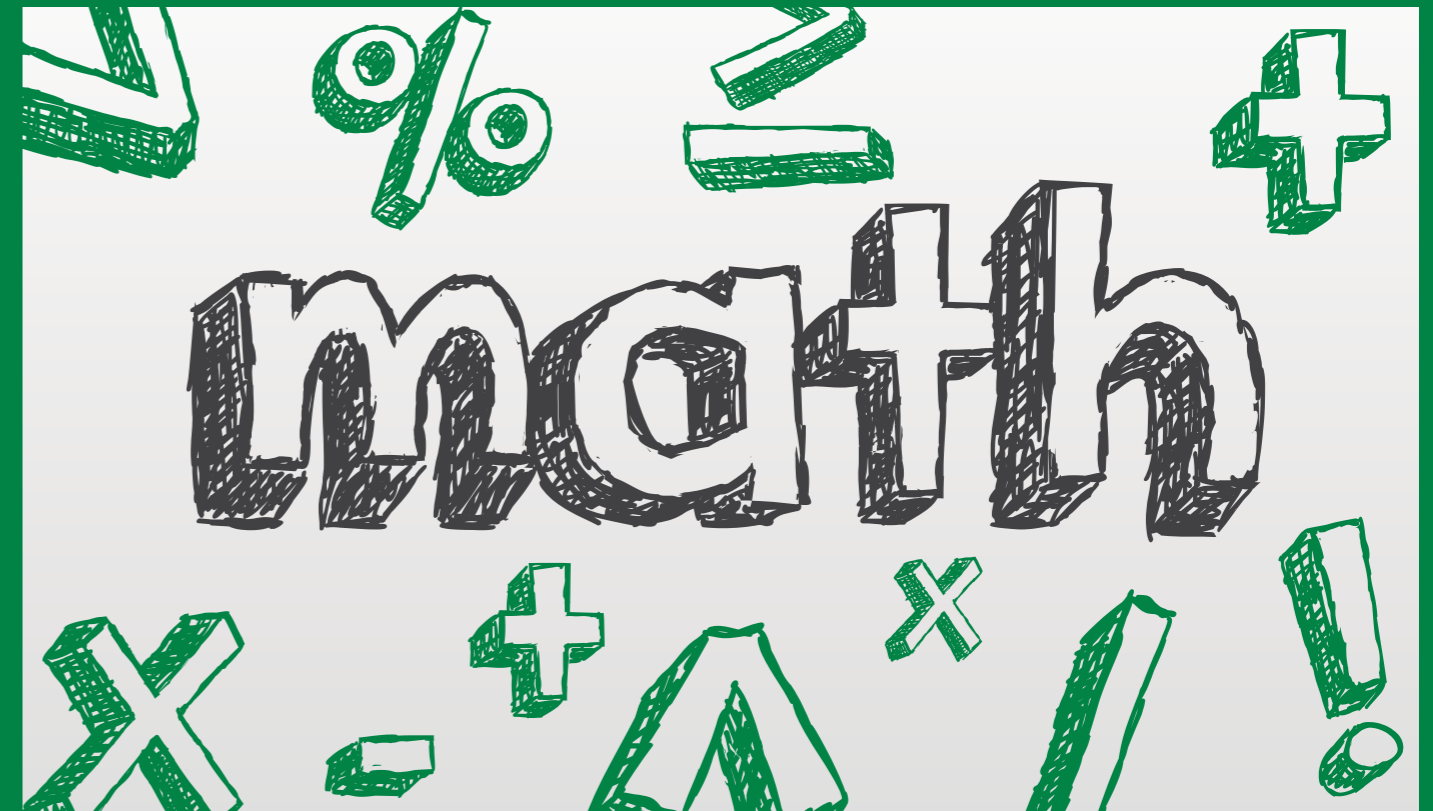
What make this book important and meaningful are the Insights of authors around critical issues such as the applicability of a particular research method in various social and geographical settings, handling data in different languages, conducting research on very young children, maintaining and ensuring impartiality of researchers, and challenges of upholding the 'emancipatory' roles of research methodologies while working with disadvantaged groups.



Mathematics Education in Rural Communities

Research Symposium

Submitted by Dr Anjum Halai
Associate Director & Head Research (AKU-IED, East Africa)



A research symposium was conducted at the Tanzania Institute for Higher Education (TIHE) in Dar-es-Salaam in August, 2012. The event was part of a three year study funded by the Social Sciences & Humanities Research Council to understand how cross-sector and interdisciplinary partners can work with local communities, regional and national institutions and international organisations to enhance mathematics teacher education in rural and remote settings in Tanzania.

The research involved five in-depth case studies of promising practice in mathematics education in the remote rural context in order to learn how to create and sustain primary teacher development in ways that honour community tradition, practice and knowledge side by side with human science research traditions, practices and knowledge. The approach to partnership used during this project offers new possibilities for developing mathematics teacher development policies, strategies and models for rural communities.

The symposium was attended by key stakeholders in education, including representatives from the Ministry of Education and Vocational Training in Tanzania, University of Dodoma, Tanzania Institute of Education. Other participants, notably teachers, head teachers, and teacher educators from the schools and districts in the focused region also actively participated. The symposium focused narrowly on the findings from five case studies and to seek stakeholders' feedback on emerging findings and interpretations. This feedback would eventually contribute to the goal of understanding how universities can work with a range of partners in order to enhance professional development opportunities for rural mathematics teachers, which in turn will enhance the learning environment for children in mathematics. This is important because the research grant provides a small amount of support for creating and piloting models of professional development.

The project team plans to convene another such meeting to evaluate the models that emerged from the research conducted, as well as the suggestions offered in this symposium.

An Assessment of the Quality of the Nursing Examination Boards and Midwifery Schools

Submitted by Dr Rafat Jan
Director Midwifery Programme (AKU-SONAM, Pakistan)

The Pakistan Nursing Council (PNC) requested the Aga Khan University's School of Nursing and Midwifery to conduct an assessment of the Nursing Examination Boards (NEBs) and Midwifery Schools across Pakistan.

Midwives are recognised as the frontline health care providers for pregnancy and child birth, and their skills and competencies are essential for safe motherhood in the region. For this reason, the quality of education for midwives has a major influence on the health care facilities available for rural women and children. The NEB conducts the examinations for Lady Health Visitors, midwives, and nurse-midwives. Altogether, there are four NEBs in Pakistan, i.e. one in each province. The NEBs function with support from the PNC, and must assess students' exit examinations. However, findings from the Peshawar and Abbottabad visit (2011), it was reported that NEBs and midwifery schools all over Pakistan face a number of challenges during the provincial examination and require major improvement.

Thus, a need rose to conduct an in depth assessment and analysis of all factors that facilitate or hinder the complete process from planning to implementation during the midwifery examination. This project will help us identify the gaps in the midwifery

examination systems in Pakistan, and recommend steps to implement and overcome those gaps. The data is being collected using both the quantitative and qualitative data collection approaches.

The survey questionnaire and interview guide has been developed by the team after a thorough review of the literature. The survey questionnaire, interviews and observations are being processed by the NEBs and midwifery/public health schools to assess the overall examination systems in each province. Information regarding human resources, administration, finance and infrastructure is obtained from the survey questionnaires. Personal interviews will be carried out with the Controller Examinations and Deputy Controller Examinations. In addition, focus group discussions will be held among the external examiners of the midwifery programme to identify the challenges faced during the summative examination. Moreover, face to face interviews will be done with the principals of schools regarding evaluation methods and focus group discussions will be conducted amongst the midwifery teachers.

These activities started in November 2012 and the submission and dissemination of the findings as well as the recommendations will take place in 2013.

Re-creating History in the Muslim Tradition

Arabic Pasts: Histories and Historiography

Submitted by Dr Kathryn Spellman-Poots
Associate Professor (AKU-ISMC)

On September 28, 2012, AKU-ISMC co-hosted the fifth annual 'Arabic Pasts: Histories and Historiography' workshop in collaboration with the School of Oriental and African Studies (SOAS). The workshop was convened by Sarah Bowen Savant of the AKU-ISMC, Konrad Hirschler from SOAS and James McDougall from the University of Oxford.

The purpose of this yearly event was to bring together historians holding a keen interest in mapping Arabic traditions that have survived across spatial and chronological boundaries. Given conventional departmentalised within universities, historians of 8th century Syria, for example, do not generally talk to historians of 20th century Libya – even though they engage with many of the same issues related to the writing and rewriting of history, and the creation of the past. This year, eight speakers addressed the theme: "What's in a Period? 'Jāhiliyya, 'Abbāsīd', and the 'Arab Spring' in Arabic Historical Writing" in the workshop.

The speakers discussed the concept that Arabic historical tradition has known many different ways of

marking time in the interests of religions, dynasties, nations and social groups. Authors used literary and rhetorical means to create and sustain new periods, and specified that the established notions were often recycled and endowed with new meaning.

The concept of *Jāhiliyya* has been reworked many times over, and dynasties such as the *Umayyads* and *'Abbāsids* have taken on new significance in discourses of modern nations. They explained that the new notions such as the 'Crusading period as one of anti-colonial resistance' came to life in the 19th century. Today, the Arab Spring, a new period, has known its own marker of the time, in Egypt, for example, named days are now part of national history, including 'the Day of Rage' (*Yawm al-Ghadab*) and 'the Friday of Departure' (*Jum'at al-Rahil*).

The presenters included scholars from the UK, Germany, Nigeria, and the US. Papers developed as a result of the workshop will be submitted for publication in a thematic issue of the Journal *Der Islam*, to be edited by Drs Savant and Hirschler.

AKU is also Registered with



The Central Contractor Registration (CCR) was the primary supplier database for the US Federal government until July 30, 2012, when the SYSTEM FOR AWARD MANAGEMENT (SAM) went live. SAM, is now the Official US Government consolidated system for CCR/FedReg, ORCA, and EPLS. The Aga Khan University had proactively migrated its CCR records to SAM in July 2012, so that NIH awards and subsequent electronic submission of grants proposals are not hindered.

It is hoped that SAM will help create a more streamlined and integrated federal acquisition process.

Annual Research Institute 2012

Aga Khan University Institute for Educational Development, East Africa

Submitted by Dr Anjum Halai
Associate Director & Head Research (AKU-IED, Pakistan)

Institute for Educational Development, East Africa conducted its second Annual Research Institute which took place on 14, 15 and 16 November 2012, at AKU-IED campus in Dar-es-Salaam, Tanzania. This event placed a specific focus on Gender Issues in Education, with presentations by internationally renowned researchers. It was an ideal platform for local and international academics, researchers and educators with an interest in gender issues in education.

Keynote Speakers & Workshop Leaders included the following:

Speaker	Designation
Dr Fatuma Chege	Associate Professor & Dean, School of Education, Kenyatta University, Kenya
Professor Miriam David	Professor Emerita of Education, Institute of Education, University of London, UK
Dr Jollu Rubagiza	Acting Director, Centre for Gender, Culture & Development, Kigali Institute of Education, Rwanda
Dr Jane F.A. Rarieya	Associate Professor, Aga Khan University, Institute for Educational Development, East Africa
Dr Anjum Halai	Professor, Aga Khan University, Institute for Educational Development, East Africa
Neema Kitundu	Ag. National Coordinator – FAWE, Tanzania
Dr Anna Obura	International Consultant Specialist, Equity in Education, Kenya

The themes for the three day event revolved around Gender Research Methodologies, Gender and Education Leadership and Gender and Educational Achievement. Objectives included providing opportunities for the development of collaborative research networks at local, regional & international levels, sharing of knowledge, experience and expertise in key areas of social science research, especially with reference to gender equity as an integrated element of education quality.

AKU-IED, EA aims to develop a critical mass of skilled professionals working in all areas of education, raising human resource capacity for the benefit of the region, and doing work that is well aligned with regional Government priorities. This is done through AKU-IED, EA programmes and research. The intellectual hubs at IED focus around two research networks, namely Multiliteracy in Multilingual Education and Inclusion and Equity in Education. Research at the Institute is embedded at every level of the work conducted, investigating core issues of quality in educational systems and educational achievement, and the factors that have an impact on standards in education.

The aim of this research is to contribute to the

transformation of policy and practice of education in East Africa. This research is concentrated in the following two multidisciplinary Research Networks:

Multi-Literacy in Multilingual Education Research Network

In this Network, literacy is not limited to the traditional notion of reading and writing of print materials. It is a holistic notion involving engagement with and interpretation of texts, which are inherently complex and multi-dimensional, including verbal, numeric, pictorial, digital, video amongst others. Specific focus of this research within this network includes:

- Early years education and development
- Development of mathematical literacy in multilingual classrooms
- Development of linguistic literacy in the mother tongue or language of instruction
- Assessment of learning and the role of language in assessment
- ICT literacy – this is integrated across research areas



Photograph by Alkarim Pirmohamed

Inclusion and Equity in Education Research Network

Improving access to quality education invariably raises issues of inclusion and equity, so that all learners can access quality education irrespective of gender, HIV-AIDS status or other forms of exclusion, such as special learning needs. At IED this Research Network encompasses three specific areas of:

- Gender issues related to access, quality and achievement in basic education and in educational leadership, mainly in remote rural and disadvantaged contexts in East Africa

- Issues related to HIV/AIDS awareness through teacher education and questions related to children's knowledge about sexual practices
- Equity and opportunity of learning for students in large classes and in contexts of poverty
- Student participation in school governance

The Aga Khan University in East Africa aims to conduct research which will contribute to the transformation of policy and practice in the region. As part of this goal, this Annual Research Institute successfully brought together educators and researchers with a specific interest in gender issues in improving education policy, process and outcomes.

DO YOU KNOW?

"Stem cell therapies have the potential to do for chronic diseases what antibiotics did for infectious diseases. It is going to take years of serious research to get there, but as a neurologist, I believe the prospect of 'penicillin' for Parkinson's is a potential breakthrough that we must pursue. As in other areas of creative endeavor in science, the answers will come only with careful experimentation."
-- Joseph Martin, Dean of the Faculty of Medicine at Harvard University

"Science has presented us with a hope called stem cell research, which may provide our scientists with answers that have so long been beyond our grasp. I just don't see how we can turn our backs on this -- there are just so many diseases that can be cured, or at least helped. We have lost so much time already, and I just really can't bear to lose any more."
-- Former First Lady Nancy Reagan, USA

AKU-IED Pakistan's International Conference- 2012

In Search of Relevance and Sustainability of Educational Change

Submitted by Dr Dilshad Ashraf
Assistant Professor & Head RAPS (AKU-IED, Pakistan)

The Aga Khan University's Institute for Educational Development (AKU-IED), Pakistan organised its ninth international conference titled 'In Search of Relevance and Sustainability of Educational Change' during November 1-3, 2012. The backdrop of the conference was the narrative of educational change which has been developing for the last few decades.

The conference called for critical reflection on the education system in contemporary times, i.e., gaps inherent in the education systems and alternative / innovative 'solutions' for effective, relevant and sustainable change. Key questions addressed by the speakers and presenters explained ways to promote peace, resilience, and societal harmony through innovative pedagogies, learner and learning spaces, assessment, relevant curriculum and responsive

governance, and management practices. Provost Greg Moran delivered the opening remarks and was followed by the Chief Guest, Dr Pervez Amir Ali Hoodbhoy, who delivered the inaugural speech. Other speakers at the Conference included eminent scholars such as Professor Andy Hargreaves, Professor G. I. Chandralatha Gunawardena, Dr Thomas Christie, Dr Joshua Muskin, Dr Bernadette L. Dean, and Ms Sadiqa Salahuddin.

The three day conference was attended by approximately four hundred national and international delegates who represented prestigious organisations such as UNICEF, the Higher Education Commission, and other academic, research, teacher training, educational development, and public and private sector organisations.



Photograph by Audiovisual Department, AKU

Postdoctoral Fellows

Dr Zulfiqar Ali Naqvi

Research Interest: Breast Cancer Recurrence and Stem Cell
Supervisor: Dr El Nasir Lalani

Dr Naqvi did his PhD from the University of Karachi in 2009. He joined AKU as a postdoctoral fellow in September 2009.

• • •

Dr Muhammad Khalid

Research Interest: Prostate Cancer Stem Cell
Supervisor: Dr El-Nasir Lalani & Dr Anwar Ali Siddiqui

Dr Khalid completed his PhD from the University of Tuebingen, Germany in 2009. He joined AKU as a postdoctoral fellow in April, 2010

• • •

Dr Asghar Nasir

Research Interest: Identifying Key Transcriptional Factors Regulating the Expression of Tumor Suppressor Genes in Epithelial Cancers

Supervisor: Dr El-Nasir Lalani & Dr Anwar Ali Siddiqui

Dr Nasir did his PhD from Division of Immunology, Infection and Inflammatory Disease, School of Medicine, King's College London, UK in 2012. He joined AKU as a postdoctoral fellow in January, 2013. • • •

Dr Junaid Iqbal

Research Interest: Antimicrobial Agents/Antibiotic Resistance in Bacteria/Mechanistic of Disease in Bacterial and Amoebic Brain Pathogens

Supervisor: Dr Naveed Ahmed Khan

Dr Iqbal did his PhD from Aga Khan University in 2011. He joined AKU as a postdoctoral fellow in June, 2011.

• • •

Dr Humaira Qureshi

Research Interest: Aflatoxin, Liver Cancer, HCV

Supervisor: Dr Saeed Hamid & Dr Naveed Ahmed Khan

Dr Qureshi completed her PhD from Aga Khan University in 2011. She joined AKU as a postdoctoral fellow in April, 2012

• • •

Dr Sahreena Lakhundi

Research Interest: Degradation of Cellulose for the Production of Biofuels as well as with Reference to the Intervention of New Therapeutic Agents.

Supervisor: Dr Ruqaiyyah Siddiqui

Dr Lakhundi completed her PhD from University of Edinburgh in 2011. She joined AKU as a postdoctoral fellow in September, 2012

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Research Funding and Output 2012

Research Funding

Extramural Grants

AKU was awarded a total of US\$21.1M for 64 grants (See figure 1) of which MC (P) was the largest recipient followed by AKU-Afghanistan. 52% of the funds were for two major FHS thematic areas: a) Infection, Immunity, Inflammation (III) and b) Maternal Newborn and Child Health (MNCH), mostly to undertake epidemiological studies (on etiology of neonatal infections, MNCH, determination of environmental pollution health hazards, etc.), and capacity building (see Tables 1-2).

Figure 1

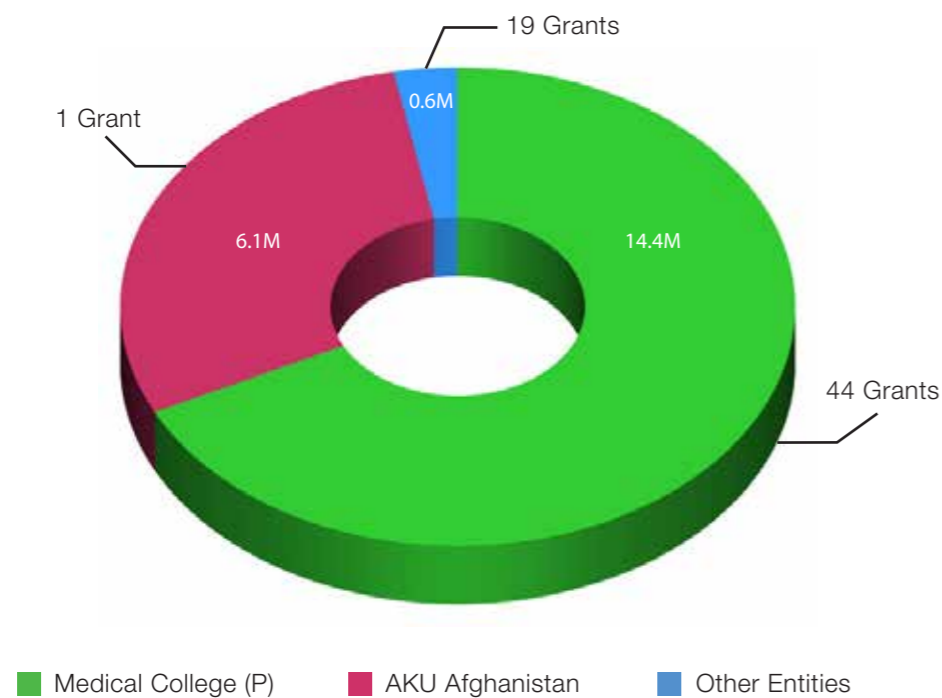


Table 1

Thematic distribution of grants awarded to FHS Pakistan, 2012

Thematic Area	# of Grants	US\$
Maternal, Newborn and Child Health	15	4,721,891
Infection, Immunity and Inflammation	9	5,927,276
Non Communicable Diseases	3	377,956
Human Development	2	1,893,359
Neurosciences	1	2,125
Stem Cell Biology	-	-
Others / Non-Thematic*	16	1,634,601
TOTAL	46	14,557,208

*These grants are mainly to undertake programme assessment exercises and training programmes/ workshops for health managers, students and research staff.

Table 2

Categorization of grants awarded to FHS Pakistan, 2012

Type of Grant	# Grants	US\$
Epidemiological Surveys	12	2,430,840
Epidemiological / Community based trials	11	4,254,191
Capacity Building*	8	1,237,875
Lab based Research	1	22,332
Consultancy**	8	249,307
Clinical Trial ¹	3	4,255,027
Clinical Studies	3	2,107,636
TOTAL	46	14,557,208

*Mainly to undertake training programmes /workshops for health managers, students and research staff.

** Most consultancies were from the Community Health Sciences and Pediatrics & Child Health departments

¹Field-based trials (2 grants, US\$ 4.2M) and hospital based trials (1 grant, US\$ 7,486).

Intramural Grants

a. University Research Council Grants (URC Grants)

In 2012, URC received 28 grant applications (total request US\$ 0.49M). A panel of internal and external experts reviewed applications and nine (35%) proposals were selected (see Table 3).

Table 3

Status of URC grants awarded in 2012

Entity	# Grants Submitted	US\$	# Grants Awarded	US\$
AKU-MC (P)	19	328,849	5	79,232
AKU-SONAM (P)	1	19,884	-	-
AKU-IED (P)	4	75,259	3	47,201
AKU-IED (EA)	1	22,528	-	-
AKU-MC (EA)	3	43,973	1	17,326
TOTAL	28	490,493	9	143,759

b. AKU Grants Review Committee (GRC): Fast-track Strategy

URC endorsed the increase in the number of grant competitions from 2 to 4 Cycles per year to allow faster turnaround of applications. The pool of reviewers have also been expanded to expedite fast-track decisions on a rolling basis. It is anticipated that these changes will allow PI's to start their research projects in a timely manner.

Research Outcomes

Research Publications

a. Journal Articles

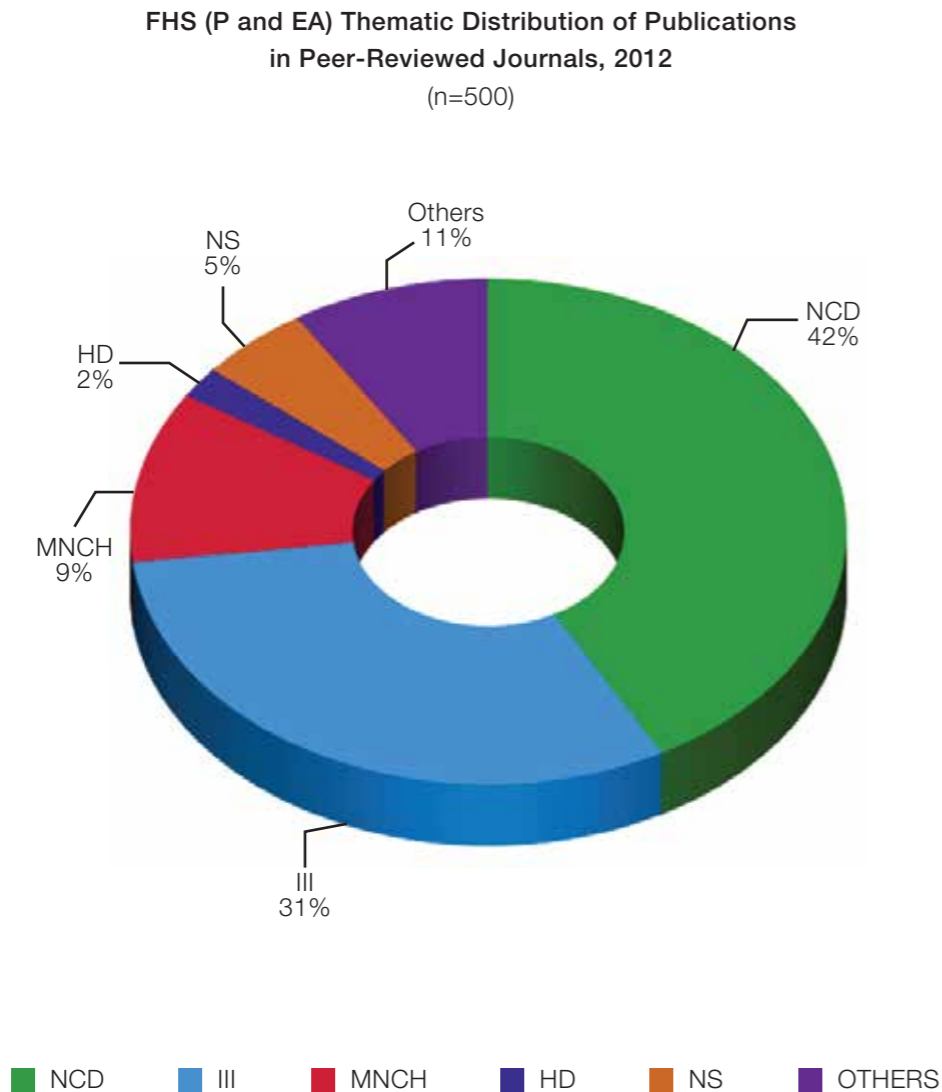
In 2012, AKU faculty published 514 papers based on work undertaken at AKU. 91% of the publications were by MC (P) faculty. Of the published papers, 76% were research papers, 12% reviews and viewpoints, 8% case studies, 2% were surveys, and less than 2% were communications. Most papers from FHS were in two thematic areas: Non-Communicable Diseases and Infection, Immunity, Inflammation with a marked shift in the number of publications in indexed and foreign journals.

b. Books and Book Chapters

In 2012, faculty published nine books: two, single author books by ISMC faculty Dr. Abdou Filali-Ansari and Dr. Aptin Khanbaghi, and seven co-authored books: MC(P): 2, IED (P): 2, ISMC: 3. Faculty contributed forty-two chapters in seven co-edited books, and five chapters in books edited by non-AKU faculty; IED (EA): 3, ISMC: 1, and, MC(EA):1.

Figure 2

Pie chart below shows paper distribution by the FHS thematic area (Social and Economic Determinants of Health) where 500 of the 514 publications emanated from FHS (P and EA).

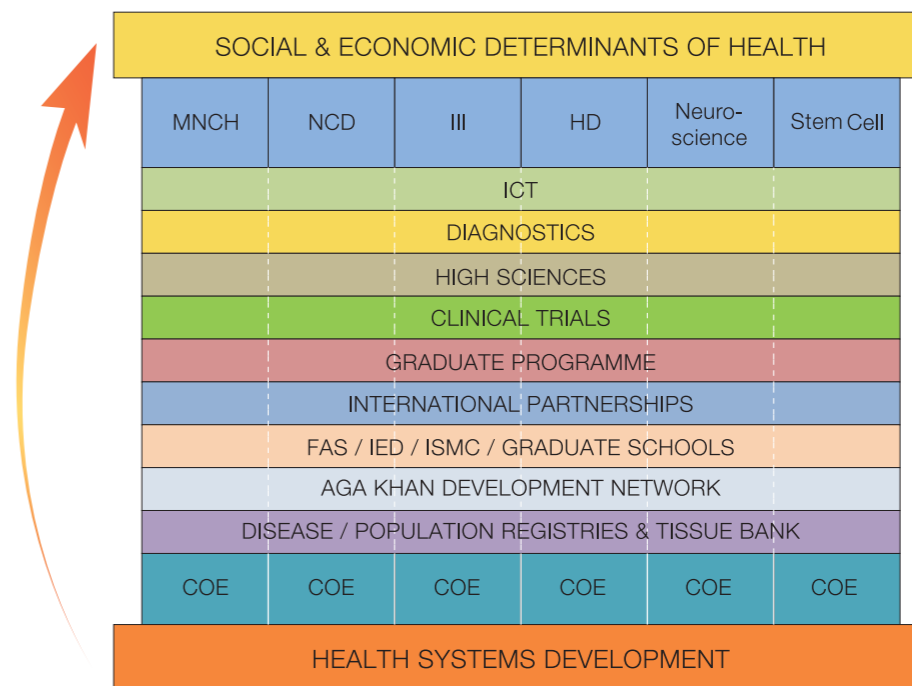


- Maternal, Newborn and Child Health (MNCH)
- Non-Communicable Diseases (NCD)
- Infection, Immunity And Inflammation (III)
- Human Development (HD)
- Neuroscience (NS)
- Stem Cell (SC)

Social & Economic Determinants of Health

AKU has recently undertaken a University-wide review of its research capacities and areas of research concentration. Following wide consultation with faculty across its entities in Asia and Africa, the University has proposed an overarching theme of "Social and Economic Determinants of Health." The six sub themes are:

- Maternal, Newborn and Child Health (MNCH)
- Non-Communicable Diseases (NCD)
- Infection, Immunity And Inflammation (III)
- Human Development (HD)
- Neuroscience (NS)
- Stem Cell (SC)



AKU-UCSF PARTNERSHIP

The University of California, San Francisco (UCSF) and the Aga Khan University had signed a memorandum of understanding to advance their common goals to promote equitable human advancement and social justice in the less privileged parts of the world. Based on this MoU, a bi-phased programme is proposed to assist AKU in developing critical capacity in stem cell science and regenerative medicine therapies at AKU in Pakistan. The first phase of this programme will start in early-2014. AKU and UCSF will also work together to build education and research capacity in the area of Integrated Primary Health Care (IPHC). The IPHC model has already started its work in the coastal region of Kenya in early 2013. ● ● ●

Grants and Opportunities

Upcoming Funding Opportunities

Due Date	Funding Opportunity	Sponsor
15 April 2014	Leverhulme Small Research Grants	British Academy
07 January, 2014	Innovational Research Incentives Scheme	Netherlands Organisation for Scientific Research (NWO)
25 January 2014	NINDS Neuroscience Development for Advancing the Careers of a Diverse Research Workforce (R25)	National Institutes of Health
27 June, 2014	Special Programme Islam, the Modern Nation State and Transnational Movements	Gerda Henkel Stiftung
02 December, 2013	Interdisciplinary Behavioral and Social Science Research	National Science Foundation

Leverhulme Small Research Grants

Grants are available to support primary research in the humanities and social sciences. Applications will not be considered for less than £500. The maximum grant is £10,000 over two years. Applications for collaborative or individual projects are equally welcome under this scheme. Applications from international groups of scholars are welcome, provided there is a UK-based scholar as lead applicant.

Funds are available to facilitate initial project planning and development; to support the direct costs of research; and to enable the advancement of research through workshops or conferences, or visits by or to partner scholars. Applicants may seek support for any combination of eligible activity and cost up to the overall limit of £10,000. The Academy will assess applications equally on their merits, with no preference as to mode of enquiry.

Further details regarding deadline and application can be obtained from <http://www.britac.ac.uk/funding/guide/srg.cfm>

Innovational Research Incentives Scheme

Innovational Research Incentives Scheme Veni is a grant for researchers who have recently obtained their PhD. Veni is part of the Incentives Scheme. It allows researchers who have recently obtained their PhD to conduct independent research and develop their ideas for a period of three years.

Veni is targeted at outstanding researchers who have recently obtained their PhD. They are at the start of their scientific career and display a striking talent for scientific research. Researchers who have completed their PhD within the last three years can apply for a Veni grant. There may be a possibility of an extension in some cases. A researcher may apply for a Veni grant on a maximum of two occasions. Researchers from outside the Netherlands may apply.

A funding round is held every year. The deadline for submitting applications in the 2014 round is 7 January 2014, Application form and notes can be downloaded two months in advance of the deadline.

For further details, please visit: <http://www.nwo.nl/en/funding/our-funding-instruments/nwo/innovational-research-incentives-scheme/index.html>

NINDS Neuroscience Development for Advancing the Careers of a Diverse Research Workforce (R25)

The purpose of this announcement is to invite applications for mentoring and professional activities to advance the careers and neuroscience development of diverse neuroscience researchers. The goal of the NINDS Neuroscience Development for Advancing the Careers of a Diverse Research Workforce (NDACDRW) is to support mission relevant development and/or implementation of programmes to: (1) increase the pool of Ph.D.-level research scientists from diverse backgrounds underrepresented in biomedical research who are neuroscience researchers- participation is limited to graduate, post-doctoral and/or junior-faculty career levels only; and (2) facilitate career advancement/transition of the participants to the next step of their neuroscience careers.

NINDS support for R25 programme relies equally on scientific merit and programmatic considerations. Consequently, we recommend that potential applicants contact programme officials at NINDS before preparing an application. NINDS will not support projects if they do not fulfill current programmatic priorities at NINDS.

Only one application per institution is allowed.

The official announcement and description of this opportunity may be found on the funding agency's website:

<http://grants.nih.gov/grants/guide/pa-files/PA-13-256.html>

Special Programme Islam, the Modern Nation State and Transnational Movements

The special programme "Islam, the Modern Nation State and Transnational Movements" is aimed at researchers who, with an eye to current developments, are examining the emergence of political movements in the Islamic world at the national and/or transnational level.

The Foundation generally accepts applications for research projects made by universities, other research institutes or comparable institutions as well as by one or several PhDs or scholars with Post-doctoral Lecture Qualification.

The grants for research projects involve, depending on the type of project, the assumption of costs for personnel, travel, materials and/or other costs. The applicants must be actively involved in the research work of the project. It is possible to apply for financing for your own post at a research establishment. The precondition: you have successfully completed your Ph.D. and afterwards have at least five years professional experience working in an academic field. Project participants can also be financed in the form of a research scholarship. As part of a research project, the costs incurred of visiting (foreign) scholars can also be financed.

Further information can be obtained from http://www.gerda-henkel-stiftung.de/application-for-research-projects?page_id=74874

Interdisciplinary Behavioral and Social Science Research

The Interdisciplinary Behavioral and Social Science Research (IBSS) competition promotes the conduct of interdisciplinary research by teams of investigators in the social and behavioral sciences. Emphasis is placed on support for research that involves researchers from multiple disciplinary fields, that integrates scientific theoretical approaches and methodologies from multiple disciplinary fields, and that is likely to yield generalizable insights and information that will advance basic knowledge and capabilities across multiple disciplinary fields.

Full Proposal Deadline: December 02, 2013

The official announcement and description of this opportunity may be found on the funding agency's website: <http://www.nsf.gov/pubs/2012/nsf12614/nsf12614.htm>