

Name: Dr. Firdausi Qadri

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Headshot photo:



Bio/professional background:

Dr Qadri leads the Infectious Diseases Division in the planning and implementation of research related to the research priorities of icddr,b. She also heads the Mucosal Immunology and Vaccinology laboratory. Her work includes basic and applied immunology of infectious diseases but also clinical and large field based studies on enteric vaccines. Special interests are infections caused by *V. cholerae*, ETEC, *Salmonella spp* and *Helicobacter pylori*. The results have produced an impact in the field of enteric diseases specifically in the area of immunological and genetics and genomic mechanisms, diagnostics and vaccine development.

Over the last decade she has been leading the largest field studies in over 900,000 participants of an oral cholera vaccine in urban slums in Bangladesh so as to pave the way forward for introducing cholera vaccine in high risk people in the country and in the near future in the region and globally. This has been a very important achievement in her career for providing evidence of the success of affordable vaccines that work effectively in the real life situation. The multi-directional work with the Government of Bangladesh and International experts has resulted in providing evidence and also supporting the transfer of technology of cholera vaccine to Bangladesh and its production locally which will hopefully be available at a low and affordable cost.

Studies on enteric diseases have been designed based on laboratory and field based activities which together have yielded results that are world class in quality and evolved with active collaboration with laboratories in the USA, UK and Europe. The focus has been on basic studies on the understanding of the mucosal immunology of diseases with the thrust on natural infections and its application and extension to better determining vaccine efficacy. Coupled to this is the attempt to understand the role of environmental and nutritional factors on the immune responses to natural infection and vaccines. Emphasis has been on studies of cholera, ETEC and typhoid vaccines and determining optimal methods for determining surrogate markers of protection. The hypo-responsiveness of developing country children to oral vaccines is also an area of interest.

Study of genetics and genomics of host and pathogens has been important in the attempt to understand infectious diseases, population based predisposition, metagenomics and changing virulence attributes of pathogens.

Working with Centres of Excellence in the Sweden, UK and USA in the field of proteomics, genomics and metagenomics, key features have been identified that can be related to causes of propensity of infections. Another important interest is the development of diagnostic tests for detection of enteric pathogens. This has included development of setting up of a hybridoma laboratory for production of mouse monoclonal antibodies and development of diagnostic assays for detection of *V. cholerae* O1/O139 and other bacterial pathogens. These monoclonal antibodies are used in Bangladesh and in other countries for diagnosis and research purposes. In addition to this, the development and testing of assays for detection of *S.Typhi*, *S. Paratyphi*, *V. cholerae* O1/O139, ETEC and *H. pylori* have been developed.

National and International Awards

Dr Qadri was awarded the Gold Medal for outstanding research in Biological Sciences for 2006 by the Bangladesh Academy of Science. Moselio Schaechter Award for scientific achievement by the American Society of Microbiologists. She received the Christophe & Rodolphe Merieux Grand Prize (€500,000) from the French Academy of Sciences in 2012 for her contribution to infectious disease research. She received the TWAS prize from the World Academy of Science in 2013 for excellence in research. She was made a member of the High Level Panel of the UN Technology Bank which has been set up in 2014. She is on national and international advisory panels as follows over the last few years:

- 2006 Elected Fellow, Infectious Diseases Society of America (FIDSA), USA
- 2011- Member of the Coalition against Typhoid (CAT)
- 2011-2016 Member of the Advisory Group on Global Action Plan for Influenza Vaccines
- 2012- Member of the advisory group on Coalition for Cholera Prevention and Control.
- 2012 Elected Fellow of the Academy of Developing world (TWAS)
- 2012- Ambassador of American Society for Microbiology (ASM) for Bangladesh
- 2013 Elected Honorary International Fellow of ASTMH.
- 2014 Members of the UN Secretary-General's High-level Panel on Technology Bank for the Least Developed Countries (LDCs)
- 2015 Member of the SAGE Working Group on Oral Cholera Vaccine.
- 2016 WHO Strategic Advisory Group of Experts (SAGE) on Immunization
- 2017 Member advisory committee of the WHO- Vaccine Investment Strategy

Capacity building and development of Scientists

A large part of Dr. Qadri's career has been focused in developing leaders in the field of infectious disease research from different disciplines and institutions. She has inspired many young scientists through her teaching and research activities. To date, she has trained and mentored over 500 postgraduate students from Bangladesh and globally. In addition she has been involved in mentoring PhD students from the University of Gothenburg and Japan, USA and Bangladesh. As a result of training programs and training large grants received from the NIH (USA), Sida (Sweden), Gates Foundation, Wellcome Trust and European Union and a network of international and national researchers have been developed.

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