Mustafa Naseem

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Interests

I am primarily interested in developing technological solutions that can help improve public health service delivery in underserved communities. My research interests lie in the fields of Information and Communication Technology for Development (ICTD) & Human Computer Interaction for Development (HCI4D). My work spans Maternal and Child Health (MCH), and Water and Sanitation (WASH), and more recently, in Behavioral Health. I aspire and believe in scaling solutions through the public sector to impact millions of lives. My work has been supported by generous funding from the Bill and Melinda Gates Foundation, the Department for International Development (DFID - UK), the National Academies of Science, Engineering and Medicine, National Institutes of Health (NIH), and the United States Agency for International Development (USAID).

Education

2015	HBX, Harvard Business School Credentials of Readiness (CORe) Certificate
2011 - 2013	University of Colorado Boulder Master of Science Major: Information and Communication Technology for Development (ICTD) Graduate Certificate: Science and Technology Policy
2006 - 2010	National University of Sciences and Technology (NUST) Bachelor of Engineering Major: Electrical (Telecom) Engineering

Academic Employment

July 2018 - Present	**Clinical Assistant Professor**, University of Michigan Ann Arbor School of Information
September 2016 - June 2018	**ICTD Expert in Residence**, University of Colorado Boulder ATLAS Institute
October 2013 - August 2016	**Director Innovations for Poverty Alleviation Lab (IPAL)**, Information Technology University (ITU), Pakistan
April 2013 - July 2013	**Technical Lead**, MIT Global Startup Labs University of the Witwatersrand, South Africa

Awards, Grants, and Other Support

AWD011803   **Naseem (PI)**   **$100,000**   05/1/19 – 11/30/20
Grand Challenges Exploration Round 21, Bill and Melinda Gates Foundation
The goal of this project is to analyze incoming immunization data, and synthesize it on an android application for vaccinator supervisors. The project will involve conducting contextual inquiry interviews with 15 vaccinator supervisors in 4 districts of Punjab, Pakistan, co-designing the user interface of the mobile app, and developing and deploying an android app in 1 district of Punjab for a brief pilot.

AWD010891   **Naseem (Co-PI)**   **$250,000**   08/15/18 – 07/31/20
National Institutes of Health (NIH)
The goal of this project is to conduct a randomized control trial (RCT) in Punjab, Pakistan to evaluate the impact of a speech based maternal and child health (MNCH) platform called Super Abbu. The RCT will involve recruiting 1600 household, performing baseline and endline surveys, and conducting a 10-month pilot with 1 control and 2 treatment arms.

AWD010136   **Naseem (Co-PI)**   **$500,000**   08/16/18 – 09/30/21
National Academies Keck Future Initiative, National Academies of Science, Engineering and Medicine
The goal of this project is to understand the information needs of low-income, pregnant women in Cape Town (South Africa), Detroit (USA), and Lahore (Pakistan), and to design and pilot digital technologies that can improve information delivery to this audience, with the aim to discover generalizable findings from this cross-country research study.

AWD010010   **Naseem (PI)**   **$100,000**   11/1/18 – 4/30/20
Grand Challenges Exploration Round 21, Bill and Melinda Gates Foundation
The goal of this project is to create an anomaly detection system for immunization data being digitally reported in Punjab. The project will collect ground truth data through surveys, design and test the algorithm on the ground truth data, and then pilot the algorithm with the current eVaccs app in Punjab, Pakistan.

AWD-17-01-0114   **Naseem (PI)**   **$374,598**   07/01/17 – 06/31/20
Pakistan-US Science and Technology Cooperation Program, NAS & USAID
The goal of this study is to design water quality sensors and dispensing units that can be attached to community-run Water Filtration Plants funded by the Government of Punjab. The grant funds research on sensor design, user-interface and experience design, and business model generation.

Innovation Fund, UNICEF   **Naseem (Co-PI)**   **$100,000**   11/11/16 – 11/10/17
Open Source Technology Solutions, UNICEF
The goal of this project is to design a speech-based platform that allows low-literate, low-income men communicate to doctors and exchange experiences among them around Maternal and Child Health (MNCH). The grant funds the design, testing and deployment of this service, alongside scalability solutions.

Young Laureate Award Finalist   **Naseem (Finalist)**   10/18/16
Rolex Awards for Enterprise
Named among 12 finalists for the Rolex Young Laureate Award for Enterprise for the year 2016 for the Water ATM project – an initiative to enable organizations to measure water quality and access in Pakistan and elsewhere.

District Delivery Challenge Fund   **Naseem (PI)**   **UK £250,000**   06/01/15 – 02/01/17
Sub-National Governance Program (SNG), DFID
This grant supported the design, development, and deployment of an Immunization Information System (IIS) that allowed for digital record creation of routine vaccinations in the field, and reminder notification to parents through SMS and robocalls. The 7-month pilot was deployed in two districts of Punjab with 17,000 children vaccinated by 50 state-appointed vaccinators. The government is now scaling up the intervention to the entire province, with 4 Million children being immunized every year.

IDIN Summit Grant	**Naseem (PI)**	**$30,000**	09/01/16 – 02/15/16

International Development Innovation Network (IDIN), MIT D-Lab
This grant supported organizing an International Development Design Summit (IDDS) in Lahore, Pakistan where 40 participants and organizers from 15 different countries took part in creating 6 different Information and Communication Technologies (ICTs) in the sectors of health, education, agriculture and income generation. The grant supported co-design curriculum development and dissemination focused on ICT technologies.

ATLAS Directors Fellowship	**Naseem (PI)**	**$10,000**	08/14/11 – 05/10/13

ATLAS Institute, University of Colorado Boulder
Awarded the $10K ATLAS Directors Fellowship for the 2011-13 cohort. The fellowship was used towards tuition for the Masters program in ICTD.

Fulbright Foreign Student Scholarship	**Naseem (PI)**	**$98,000**	08/14/11 – 05/10/13

Department of State, United States Government
Selected for the coveted Fulbright Scholarship for the Masters program in ICTD at the ATLAS Institute, University of Colorado Boulder.

Publications and Scholarly Work

Publications (refereed)

- Batool, A., Ahmed, N., Rasool, M., Saif, U., **Naseem, M.**, "Money Matters: Exploring Opportunities in Digital Donation to Mosques in Pakistan," In Proceedings of the Tenth International Conference on Information and Communication Technologies and Development (ICTD '19). ACM, New York, NY, USA.
- Lee, J., Schwartz, L., Long, E., and **Naseem, M.,** 2018. Using Experiential-Learning and Iterative Design to Benefit Colorado's Refugees. In Proceedings of the 2018 ACM Conference Companion Publication on Designing Interactive Systems (DIS Companion, '18). ACM, New York, NY, USA, 259-263. DOI: https://doi.org/10.1145/3197391.3205446 (June 9-13, 2018, Hong Kong).
- Iqbal, M., Shahid, S., **Naseem, M.,** "Interactive Urdu Braille Learning System for Parents of Visually Impaired Students", ASSETS '17 Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility (WCRE'05), Baltimore, MD, Oct 20 - Nov 01, 2017, pp. 327-328.
- Shazad, U., Murtaza, A., **Naseem, M.**, "Role of Academic Makerspaces in Creating Social Impact," in Proceedings of the 2nd International Symposium on Academic Makerspaces (ISAM 2017), Cleveland, OH, Sep. 24, 2014.
- St-Onge Ahmad, S., **Naseem, M.**, Raza, A. A. (2017). Maternal Awareness for Low-Literate Expecting Parents via Voice-Based Telephone Services, In Development Consortium: HCI Across Borders and Proceedings of the 2017 ACM SIGCHI Conference on Human Factors in Computing Systems.
- Kharal, A., **Naseem, M.**, St-Onge Ahmad, S., Raza, A. A. (2017). Sustainable IVR-Based Social Media for the Developing World, In Development Consortium: HCI Across Borders and Proceedings of the 2017 ACM SIGCHI Conference on Human Factors in Computing Systems.
- Razaq, S., Batool, A., Ali, U., Khalid, M., Saif, U., and **Naseem, M.,** "Iterative Design of an Immunization Information System in Pakistan," in Proceedings of the 7th Annual Symposium on Computing for Development (ACM DEV '16), Nairobi, Kenya — November 18 - 20, 2016
- Batool, A., Asghar, A., Tariq, T., Badar, M., Shahzad, I., Anwar, U., and **Naseem, M.,** "Design Methods to Reduce Technology Fear and Solicit Feedback from Lady Health Workers (LHWs) in Pakistan," in Proceedings of the 7th Annual Symposium on Computing for Development (ACM DEV '16), Nairobi, Kenya — November 18 - 20, 2016
- Rashid, R., **Naseem, M.**, Waqar, Y., "POSTER: Testing the efficacy of an SMS-based tutoring system," in Proceedings of the International Conference on Mobile Systems, Applications, and Services (MobiSys '16) (Companion Volume) 2016: 52
- Batool, A., Ali, U., Razaq, S., and **Naseem, M.,** "Child Immunization Health Card Redesign: an Iterative, User-Centered Approach," in Proceedings of the Eighth International Conference on Information and Communication Technologies and Development (ICTD '16), Ann Arbor, MI, USA — June 03 - 06, 2016: 50

- Muneeb, S., **Naseem, M.,** and Shahid. S., "A Usability Study of an Assistive Touch Voice Interface based Automated Teller Machine (ATM)," in Proceedings of the 2015 Annual Symposium on Computing for Development (ACM DEV '15), London, United Kingdom — December 01 - 02, 2015, pp. 114 -115.
- Mubin, O., Tubb, J., Novoa, M., **Naseem, M.,** & Razaq, S., "Understanding the Needs of Pakistani Farmers and the Prospects of an ICT Intervention," in Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI '15), pp. 1109 – 1114.

Presentations at Conferences, Symposia, and Workshops
- Participant at the NSF-IGE kick-off meeting held at MIT D-Lab for the grant titled "Innovations in Graduate Education: Enhancing Graduate Education in Systems Thinking and Multi-Stakeholder Analysis through a Co-Creation Took Kit" (Feb '19)
- Participant at the 5-day GCE Vaccine Delivery Bootcamp, organized by the UN World Food Program Innovation Accelerator in Munich, Germany (Oct '18)
- Plenary panel conversation titled "International Law and the Internet," at the Innovation, Policy, & Technology in Law and Development Symposium, University of South Carolina School of Law (Nov '18)
- Lead Instructor at the four-week International Development Design Summit (Botswana) where 8 technologies were co-created to increase desert livelihoods (Jul-Aug '18)
- Naseem, M., Shahid, S., Maria, K., Ahmed, S., Open Session titled "Co-Design for Accessibility," at the Ninth International Conference on Information and Communication Technologies and Development (ICTD '17), Lahore, Pakistan — (Nov '17)
- Panel conversation at the Ninth International Conference on Information and Communication Technologies and Development (ICTD '17), titled "Developing Research Capacity in ICTD," Lahore, Pakistan (Nov '17)
- Panel Conversation at the 7th Annual Symposium on Computing for Development, 2016 ACM titled "Research, Practice, and Entrepreneurship in ICTD" (Nov '16)
- Plenary Panel Conversation at MIT TechCon 2016 titled "What Is Innovation, and How Do We Move from Idea to Impact?", moderated by Scott Kersner – Boston Globe (Nov '16)
- Panel Conversation at MIT TechCon 2016 titled "MakerFabInnoLabSpaceCenters-and-you, The why and how of creative community space engagement for your institution" (Nov '16)
- Invited talk at the University of Washington Change Seminar titled: "Make-i-stan: A hub for interdisciplinary collaboration and engagement in critical thinking" (October '16)
- Invited talk at the Oregon State University's Humanitarian Engineering Program titled, "Har Zindagi: Using Information and Communications Technology (ICT) to Improve Healthcare in Pakistan" (Oct '16)
- Panel discussion at International Telecommunication Union's World Telecom/ICT Indicators Summit (WTIS 15), titled "Emerging trends: Internet of Things (IoT) and mobile applications as a growing source of development data" (Dec '15)
- Invited talk at MIT's Comprehensive Initiative on Technology Evaluation (CITE), titled "Designing & Evaluating Technological Solutions to Improve Governance in Punjab" (Nov '15)
- Invited keynote at the Global Citizenship Conference at Zheijang University China, titled "Creating change makers: Encouraging students to dream again" (Sep '15)
- Lead a Tech4Sustanability workshop at the Global Citizenship Conference, sponsored by the Melton Foundation (Sep '15)
- Invited talk at the Center for Internet and Human Rights (CIHR), European University Viadrina titled "Innovations within government? Using Punjab's model of m-governance to understand public sector innovation" (May '15)
- Fireside chat at Re:publica '15 conference titled "Innovation, Internet Access and Dengue Fever: Looking at Pakistan's Complex Digital Communications Landscape" (May '15)
- Invited as participant at the Global Innovation Gathering (GIG) Workshop in Berlin to present about IPAL (May '15)
- Selected by the National Academy of Sciences to attend Entrepreneurship Workshop for Scientists and Engineers (Apr '14)

Institutional and Professional Activities
- External Reviewer, D-Lab Scale-ups Fellowship (02/19)
- External Reviewer – Dow Sustainability Fellowship (11/18)
- External Reviewer, SIGCHI 2019 (10/18)

- Program Committee Member, ICTDX 2019 (08/18)
- *Co-Lead Instructor*, IDDS Botswana 2018 (07/18)
- External Reviewer – USAID WomenConnect Challenge (06/18)
- External Reviewer, SIGCHI 2018 (10/17)
- *Member*, Search Committee, Tenure-Track Faculty Position in Engineering for Developing Communities, University of Colorado Boulder (09/16 – 05/17)
- *Member*, Graduate Committee, ATLAS Institute, University of Colorado Boulder (08/17 –06/18)
- *Member*, CompEd Committee, ATLAS Institute, University of Colorado Boulder (09/16 – 12/16)
- Lead Organizer, Pakistan ICTD Workshop 2014 (10/13 – 03/14)
- Member, Graduate Admissions Committee, Information Technology University (10/13 – 08/16)

Teaching

My teaching philosophy is premised on experiential learning, case-based methods and flipped-classroom methodologies. I believe students learn better when they are able to experience the challenges they are trying to solve, or learn by doing. Such classes not only create memorable learning experiences, but also help build skills that go beyond the classroom. I've taught in diverse academic settings, from teaching in a church on the edge of the Kalahari Desert in Botswana for 3 weeks to teaching an executive learning workshop to senior public servants in Pakistan. While I've taught large undergraduate and graduate classes (60+ students), I personally prefer to teach studio-based or seminar-based classes.

Teaching Experience (Semester Long Courses)

Course Title	Terms/Dates	Institution
SI622: Needs Assessment and Usability Evaluation	01/09/19 – 04/23/19	School of Information, University of Michigan
SI430: IT & Global Society	09/04/18 – 12/11/18	School of Information, University of Michigan
ATLS 5519: Spectrum Management & Policy	05/14/18 – 06/1/18	ATLAS, University of Colorado Boulder
ATLS 6910: Information and Communication Technology for Development Practicum	01/16/18 – 05/03/18	ATLAS, University of Colorado Boulder
ATLS 5250: Fieldwork Methods for ICTD Practitioners	01/16/18 – 05/03/18	ATLAS, University of Colorado Boulder
ATLS 5240: ICTD Lab	08/28/17 – 12/20/17	ATLAS, University of Colorado Boulder
ATLS 5230: Case Studies in ICTD	08/28/17 – 12/20/17	ATLAS, University of Colorado Boulder
ATLS 6910: Information and Communication Technology for Development Practicum	08/28/17 – 12/20/17	ATLAS, University of Colorado Boulder
ATLS 5250: Fieldwork Methods for ICTD Practitioners	01/17/17 – 05/11/17	ATLAS, University of Colorado Boulder
ATLS 6910: Information and Communication Technology for Development Practicum	01/17/17 – 05/11/17	ATLAS, University of Colorado Boulder
ATLS 5230: Case Studies in ICTD	08/22/16 – 12/15/16	ATLAS, University of Colorado Boulder
EE367: D-Lab (Digital Health Technologies)	03/07/16 – 06/24/16	EE, Information Technology University
CS568: D-Lab II (Design for Scale)	03/07/15 – 03/24/15	CS, Information Technology University
CS567: D-Lab I (Development)	10/10/14 – 02/10/15	CS, Information Technology University
CS 568: D-Lab II (Design for Scale)	03/07/14 – 03/07/14	CS, Information Technology University

Other Teaching Experience

Course Title	Terms/Dates	Institution
International Development Design Summit (Botswana)	07/15/18 – 08/13/18	D'kar Innovation Center, D'kar, Botswana
MIT Practical Impact Alliance – Participatory Design Online Course	09/25/17 – 09/28/17	MIT D-Lab (Online), Boston, MA

International Development Design Summit (Botswana)	06/25/16 – 07/23/16	D'kar Innovation Center, D'kar, Botswana
International Development Design Summit (Pakistan)	01/08/16 – 01/22/16	Information Technology University, Lahore, Pakistan
International Development Design Summit (Botswana)	08/02/15 – 08/15/15	D'kar Innovation Center, D'kar, Botswana
International Development Design Summit (Tanzania)	07/1/14 – 07/31/14	VETA, Arusha, Tanzania
Evidence Based m-Governance, National Management Course (NMC)	03/07/14	National School of Public Policy (NSPP), Lahore, Pakistan
Use of IT for Effective Policy Implementation & Service Delivery, Senior Management Course (SMC)	03/10/14 – 03/11/14	National School of Public Policy (NSPP), Lahore, Pakistan
m-Governance: Data Driven Decision Making, Mid Career Management Course (MCMC)	02/10-14 – 02/11/14	National School of Public Policy (NSPP), Lahore, Pakistan
MIT Global Startup Labs (South Africa)	06/17/13 – 07/26/13	WITS University, Johannesburg, South Africa
International Development Design Summit (Ghana)	07/06/11 – 08/08/11	KNUST, Kumasi, Ghana