

Ibrahim Mohedas, PhD

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Objective

Looking for a career where I can leverage my research and product commercialization experience to help develop more usable and successful products and services.

Education

University of Michigan – PhD & MS; Mechanical Engineering

09.2011 – 08.2016 Dissertation: Characterizing the application of design ethnography techniques to improve novice human-centered design processes.
Rackham Certificate in Engineering Education Research

University of Texas at Austin – BS; Mechanical Engineering

09.2007 – 05.2011 Graduated with Honors & Special Honors. Italian Language Minor

Work Experience

National Science Foundation – AAAS S&TP Fellow at the Convergence Accelerator

09.2019 – Present

- Assisting with program management of the Convergence Accelerator which strives to commercialize university research in an accelerated timeline.
- Working with IDEO to develop human-centered accelerator curriculum for grantees.

University of Michigan – Post-doctoral Fellow

09.2016 – 08.2019

- Project manager for the design, development, and commercialization of a medical device.
- Managing 8+ researchers and ~\$500,000 in commercialization grants.
- Responsibilities include leading clinical trial design, development, and execution, performing market research, communicating with grantors, consulting with stakeholders to evaluate key design elements.

University of Michigan – PhD Candidate

05.2011 – 08.2016

- PhD research assessing the use of design ethnography in the context of medical device development.
- Conducted 120+ interviews/focus groups and 400+ hours of clinical observations in USA, Ghana, Ethiopia, & Rwanda.
- Designed task-shifting devices for rural healthcare providers to increase access to medical services.

Massachusetts Institute of Technology – Undergraduate Researcher

05.2010 – 09.2010

- Developed atomistic models of biologically inspired materials.

Selected Publications

[Google Scholar Profile](#); Publications: seven first author journal publications (additional two in review); Conferences: five refereed publications; twenty conference poster presentations

Mohedas, I., Sienko, K. H., Daly, S. R., Cravens, G., (in review) "Student approaches to stakeholder interactions during design: factors affecting the utility of stakeholder interactions." *Journal of Engineering Education*.

Mohedas, I., Daly, S. R., & Sienko, K. H. (2015). Requirements development: approaches and behaviors of novice designers. *Journal of Mechanical Design*. 137(7), 071407-1 – 071407-10.

Mohedas, I., Sabet Sarvestani, A., Daly, S. R., & Sienko, K. H. (2015). Applying design ethnography to product evaluation: A case example of a medical device in a low-resource setting. *International Conference on Engineering Design: Design for Life*. Milan, Italy, July 27 - 30.

Selected Awards, Fellowships, And Patents

Patent: SubQ Assist; **National** Science Foundation's Graduate Research Fellowship; **Rackham** Merit Fellow; **Nominee:** Proquest Distinguished Dissertation Award; **DEED** Best Paper Finalist

User Research Experience: Principal Investigator or Project Manager

Fieldwork:

- Ethnographic Needs Finding:
 - Interviewed 50+ clinicians and conducted observations during clinical immersion in Ethiopia.
 - Identified 100+ needs and down-selected using clinician feedback & market analyses.
- Usability Testing:
 - Managed four researchers who conducted 120+ user interviews in Ethiopia & Ghana.
 - Analyzed data, wrote research reports, and redesigned prototype based on results.
- Product Market Fit:
 - Interviewed 30+ diverse healthcare stakeholders to assess product fit within Ethiopia.

Interviews/Focus Groups:

- Student use of Ethnography:
 - Tracked eight design teams during semester to understand ethnography use during decision making.
 - Analyzed 30+ interview transcripts using Nvivo 11 to find emergent themes.
- Pilot study:
 - Studied three capstone design teams using semi-structured methods to explore use of ethnography.
 - Pilot study informed design and execution of future work.

Usability & Product Testing:

- Usability Testing:
 - Conducted benchtop usability testing (n=85+) to assess ease of use with minimally trained users.
 - Defined requirements and specifications to meet end-user needs.
- Cadaver Testing:
 - Managed cadaver testing with physicians and nursing students to assess usability.
 - Developed ultrasound protocol to test and iterate prototypes (n=25)

Methodology Experience:

- Qualitative: utilized grounded theory, deductive/inductive coding, and literature based coding methods.
- Quantitative: market analyses, R-based target market assessments, & generalized linear models.

Leadership & Mentorship

Design Team Sponsor & Research Supervisor

09.2011 – 08.2019

- Mentored capstone & multidisciplinary design teams (15+) working on various global health projects.
- Advised undergraduate/graduate students (10+) conducting design research & device development.

Project Manager

09.2013 – 08.2019

- Project manager or principal investigator on nine grants (~\$680,000). Oversaw all research assistants, budgeting, and financial/final reports to granting agencies.

Technology Transfer & Entrepreneurship

- Sankalp Africa Summit [February 2018]
- GE Healthymagination Accelerator [July 2017 – February 2018]
- VentureWell E-Team: Stage I & II Workshop [March 2016 & January 2017]

Other: *WHO Global Medical Devices Forum* [May 2017], *Africa Health Business Symposium* [November 2017], *Development XChange* [June 2015, 2016, & 2017], *VentureWell Open Minds Conference* [March 2016], *Xcelerator Training Workshop for Maternal and Newborn Health Innovators* [February 2016]