

TEMITOPE A. OGUNYOKU, PH.D.

Professional Profile

I am a research leader who empowers teams to develop innovative solutions that address basic human needs with empathy and analytical evidence.

Accomplishments (selected)

TRANSFORMED A SYSTEM TO OPERATE EFFICIENTLY AT SCALE

Innovation Edge's flagship investment had a product which was scaling at a national level, but the team that developed the product did not have the processes or systems in place to meet the demands of their clients. I used a design thinking framework and led the team to identify the goals, workflow, pain points, and opportunities of their processes and data infrastructure system. Engaging directly with a service provider, I led the team to iteratively design and implement new systems that were able to clearly organize multiple datasets and reduce the data processing time by 185%.

IMPROVED THE TECHNICAL AND COMMERCIAL DEVELOPMENT OF NEW SANITATION SYSTEMS WITHIN NIGERIA AND KENYA

A major donor organization was seeking to commercialize their novel sanitation systems in low-income countries. I led a multicultural team to conduct in situ qualitative research (i.e., contextual interviews, focus groups, participatory design, observation) with potential users across two different countries. We identified and delivered user, technical, and environmental requirements to the donor organization's partners who previously lacked the data required to develop effective sanitation systems in the targeted markets.

CONNECTING HUMAN NEEDS TO TECHNOLOGY WITHIN EAST AFRICA

A key goal for IBM Research | Africa is to address developmental challenges specific to Africa. IBM Research | Africa's lab solutions all contain deep technical foundation but lacked connection to the needs of the average African consumer. I developed a process to systematically determine user needs and iteratively facilitate constant feedback from users during development. This methodology connects research teams to build user empathy and the required evidence to develop meaningful solutions.

UNCOVERED UNTAPPED VALUE CHAIN OPPORTUNITIES WITHIN SUB-SAHARAN AFRICA

Most development projects in sub-Saharan African countries lack a feasible economic plan to be sustainable. I developed a research strategy that addressed the lack of capital to sustain waste management. I established a partnership between IBM Research and a prominent Kenyan sanitation service provider and led a team to analyze the operation data to derive opportunities of their value chain. Specifically, metadata-analysis led to the recommendation to sell their waste by-product to untapped agricultural markets to increase revenue.

CONNECTING LABORATORY KNOWLEDGE TO PEOPLE TO IMPROVE QUALITY OF LIFE IN LOW-INCOME COUNTRIES

The storage, removal, transport, and disposal/reuse of fecal sludge is a big challenge for communities in low-income countries due to a lack of public services. I researched and developed a novel treatment process that disinfected fecal sludge within shared pit latrines for safe disposal. This innovation was deployed in Nairobi and was able to disinfect the fecal sludge ~1000 times faster than a traditional treatment method.

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🌐 Citizenship: USA, Nigeria
Residency: South African
Permanent Resident

Education

University of California, Davis

Ph.D. in Civil & Environmental Engineering, 2011

Dissertation Title: *"The Determination of the Fate of Triclocarban and Triclosan in Biosolid Processing Systems, and Soils Amended with Biosolids and Biochar."*

University of California, Davis

M.Sc. in Civil & Environmental Engineering, 2008

Master Report Title: *"The Implementation of Sustainable Point-of-Use Water Treatment and Sanitation Systems in Rural Uganda."*

University of California, Riverside

B.Sc. in Chemical Engineering, 2005

Engineer-In-Training

California/ 2005/EIT 123593

Skills

- Programme Management
- Strategic Planning
- Grant Writing
- Design Thinking
- Workshop Facilitation
- User & Stakeholder Interviews
- Usability Testing – Moderated & Unmoderated
- Data Analysis

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Experience (selected)

Head of Data Strategy | Oct. 2019 – Present

Innovation Edge, South Africa

- Develop and execute a strategy that aims to build the systems and teams necessary to enable the use of data collection tools at scale, and to optimise the use of data to drive quality enhancement in early learning programmes.
- Evaluate potential investments, contracting, incubation and acceleration support to investees.
- Develop tools and systems to increase the effectiveness of the overall portfolio management process.

Researcher | Mar. 2018 – Sept. 2019

Dimagi, South Africa

- Secured over USD 675,000 in research funding from the National Institutes of Health (NIH) Small Business Innovation Research (SBIR) Program, while streamlining the grants development lifecycle to improve productivity.
- Supported the design, execution, and analysis of research projects across the different business units (i.e., South Africa, India, USA, West Africa).

Research Scientist | Aug. 2013 – Mar. 2017

IBM Research | Africa, Kenya

Design Thinking Facilitator/User Researcher

- Supported healthcare, public safety, and financial inclusion to apply design thinking and agile methodologies

Project Leader

- Led cross-functional teams, including software development and engineering to design, test, and deploy mobile applications
- Led a team to develop a system that used advanced analytics to analyze public safety security data and contextual information, in real-time, helping to identify, qualify, and corroborate security incidents

Postdoctoral Researcher | Oct. 2011 - Mar. 2013

University of California, Berkeley, Civil & Environmental Engineering

- Modeled and experimentally determined the inactivation rates of pathogenic indicator organisms in human excreta using a newly developed disinfection approach
- Designed and fabricated a low-cost waterless toilet for high-density urban communities in low-income countries

Graduate Student Researcher | Sept. 2005 - Oct. 2011

University of California, Davis, Civil & Environmental Engineering

Doctoral Research

- Researched, designed, and executed experiments to determine the fate of antimicrobial chemicals in wastewater and agricultural systems

Master Research

- Iteratively constructed and tested point-of-use water, sanitation, and hand washing systems for a community in Uganda that lacked access to basic services
- Managed a multidisciplinary team to implement water, sanitation, hygiene, cook stoves, and composting technologies in Uganda

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Publications

Patents and peer-reviewed journal articles are on my personal website:

www.taogunyoku.com/publications/

Awards (selected)

- IBM Manager's Choice Award (Jun. 2014, Mar. 2016, Nov. 2016)
- Bill and Melinda Gates Foundation Supplemental Funding (\$30,000 USD) for the Reinvent the Toilet Fair (May 2012)
- University of California, Davis Department of Civil and Environmental Engineering Farrer-Patten Fellowship for Academic Achievement (May 2011)
- Outstanding Student Paper Award at the 17th Annual International Sustainable Development Research Conference at Columbia University (May 2011)
- 1st place platform presentation at the 19th Annual NorCal SETAC Meeting (May 2009)
- Grant Recipient of the 2005–2006 Environmental Protection Agency (EPA) People, Prosperity, and the Plant Design Competition for Sustainability (\$10,000 USD)
- Grant Recipient of the 2005–2006 Metropolitan Water District Southern California World Water Forum Program (\$10,000 USD)
- Recipient of the 2004–2005 Ford Motor Company Scholarship