Wangui Mbuguiro

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QUALIFICATIONS SUMMARY:

Biomedical engineer with 7 years of experience in project design and implementation in academic, research, and hospital settings. Experience leading 3 projects, with up to 25 team members, awarded at international conferences. Created 2 project-based courses to teach biomedical design and implementation to junior scientists. *Specialized skills include:*

- Experimental Design and Troubleshooting
- DNA Cloning and Mammalian Cell Culture
- Training of Junior Scientists
- Computational Biology

EDUCATION:

Johns Hopkins University, Baltimore, MD   August 2017 – Present
Doctor of Philosophy in Biomedical Engineering

Massachusetts Institute of Technology, Cambridge, MA   August 2013 – June 2017
Bachelor of Science in Biological Engineering

BIOTECHNOLOGY RESEARCH EXPERIENCE:

Johns Hopkins Computational Design of Therapeutics Lab   August 2017 – Present
Project: Multi-scale computational models of cell growth and signaling in endometriosis
- Developing differential equations-based models to understand and treat endometriosis
- Analyzed endometriosis tissue stains to quantify cells involved in local signaling
National Science Foundation Graduate Research Fellow (2017 – Present), Drescher Medical Research Award (2017)

MIT Synthetic Biology Center & Center for Gynepathology Research   January 2016 – June 2017
Project: Genetic tools for a minimally invasive molecular diagnostic for endometriosis
- Designed and developed DNA and an in vitro model to aid in diagnosing endometriosis
- Coordinated team of twelve interdisciplinary scientists to conduct and document project: 2016.igem.org/Team:MIT
Ranked top 3 (of 79 teams) for quality of poster & engineered DNA at Intl. Genetically Engineered Machine Competition

Memorial Sloan Kettering Cancer Center   June – August 2014
Project: Modeling transformation from neoplastic disease to leukemia
- Designed and conducted DNA cloning experiments to create an in vitro model of secondary acute myeloid leukemia
Awarded Martin L. & Sarah F. Leibowitz Fellowship for Outstanding Research

Johns Hopkins Applied Physics Lab & School of Medicine   August 2012 – August 2013
Project: Characterizing inflammation in blast-induced traumatic brain injury and the efficacy of protective equipment
- Conducted mice experiments, including surgery and data analysis using tissue staining and stereological methods
Co-author of Research Paper in Journal of Experimental Neurology (2016) https://doi.org/10.1016/j.expneurol.2016.01.010

BIOMEDICAL CAPABILITIES:

Certifications: Nationally Certified Emergency Medical Technician (2014-16, USA), Biomedical Equipment Technician (2015, Tanzania)
Programming: MATLAB, R, Python, Linux command line, Arduino, HTML5
Leadership (5): Research Advisor at Baltimore Underground Science Space (2018-Now), Communications Chair of Graduate Representative Org. (2019-Now), Secretary of Women of Whiting School of Engineering (2017-20), Rep. for Biomedical Engineering PhD Council (2017-19), President of Expediting Access to Standard Education (2014-16)
Select Teaching (5): Instructor at Baltimore Underground Science Space (2019), Teaching Assistant for Systems Pharmacology and Personalized Medicine Course (2019), Instructor for 3 Synthetic Biology Lab Courses (2016-17)
Presentations (5): Institute for Computational Medicine's Annual Meeting (Oral, 2019), Intl. Genetically Engineered Machine Competition (Oral & Poster, 2016), World Maker Faire in NYC (Demo, 2015), Annual Biomedical Research Conference for Minority Students (Poster, 2015), Leadership Alliance's National Symposium (Oral & Poster, 2014)