Landry Horimbere

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Education

M.Sc. in Physical Sciences, University of Maryland, College Park, Juli 2019

B.Sc. in Physics, University of Maryland, College Park, Dec. 2016

B.Sc. in Physical Sciences, University of Maryland, College Park, Dec. 2016.

Research Experience

Development of a pulsed power plasma system for studying magnetic reconnection
Professor Daniel Lathrop's Nonlinear Dynamics Laboratory, University of Maryland, College Park, 2016-present

Experiment Design: Designed the vacuum, pulsed power and diagnostic systems for an exploding wire based reconnection experiment.

Hardware: Built vacuum insulation system for arc dielectric breakdown suppression in discharge chamber.

Machined and assembled adjustable, vacuum tight, high voltage electrode insulation from high strength Alumina using diamond-tipped tools.

Software: Used Autodesk Inventor to design the experiment's structural configuration.

Simultaneously sputtered Niobium-Titanium superconducting thin-films
Professor James Williams's Quantum Materials and Devices Laboratory, University of Maryland, College Park, 2015-2016

Physics Analysis: Optimized the fabrication of Niobium-Titanium superconducting thin-films for use in the preparation of nanoscale devices suitable for low temperature electric transport experiments.

Hardware: Prepared high quality silicon substrates for thin film sputtering deposition.

Operated magnetron sputtering system to produce simultaneously sputtered alloy thin-films.

Software: Wrote Python control and interface programs to operate and monitor data acquisition equipment.

Wrote Python data processing programs to analyze and produce visualizations of collected data.

Posters & Talks

"Development of Exploding Wire Plasma System for Studying Magnetic Reconnection" Poster. 58th Annual Meeting of the American Physical Society's Division of Plasma Physics, San Jose CA, October 2016

"Development of Exploding Wire Plasma System for Studying Magnetic Reconnection" Talk. Transportation Electrification & TREND Fair, University of Maryland, College Park MD, August 2016

"Optimization of NbTi Superconducting Thin-Films" Poster. Undergraduate Research Fair, University of Maryland, College Park MD, February 2016

Skills

Laboratory skills: pulsed power system design, vacuum system design and assembly, magnetron sputterer operation, nanoscale device substrate preparation, Physical Property Measurement System (PPMS) operation

Programming, system control and data analysis: Python, Matlab, GUI design, C#, ArcGIS, Java

Communication: technical writing, public speaking, poster and info-graphic preparation

Office skills: LaTeX, HTML, Photoshop, Microsoft Office, Linux (Ubuntu, Debian), Mac OS

CAD: Autodesk Inventor, AutoCAD, Pro/Engineer, MicroStation

Professional Development

Training and Research Experience in Nonlinear Dynamics (TREND), sponsored by NSF, Jun 2016 - August 2016

Awards & Scholarships

Bridge to the Doctorate Fellow, LSAMP Bridge to the Doctorate Fellowship Program, 2017-2019

S-STEM Scholar, S-STEM Scholarship Program, 2016

Best Infographic Prize Winner, DOE Open Data by Design Contest, 2014

Atkins Scholarship, Atkins Scholarship Program, 2012

Teaching Experience

Teaching Assistant, Intermediate Electricity and Magnetism, Spring 2018

Instructor, ESTEEM/SER-Quest hands-on engineering project, Summer 2017

Professional Service

Coordinating committee member and poster competition judge, Conference for Undergraduate Underrepresented Minorities in Physics, sponsored by NIST and UMD Department of Physics, 2017

Coordinating committee member and undergraduate research panelist, Conference for Undergraduate Underrepresented Minorities in Physics, sponsored by NIST and UMD Department of Physics, 2016

Member, Society of Physics Students, UMD, 2015-present.

Banquet Chair, University of Maryland chapter of National Society of Black Engineers (NSBE), 2013

Work Experience

Faculty Assistant, Institute for Research in Electronics & Applied Physics, UMCP, Jan. 2017 - August 2017

- Designed cryogenic trap for closed circuit liquid helium recycling plant.
- Redesigned helium filtration system.

Engineering Intern, District Department of Transportation (DDOT), Washington DC, May 2015 - July 2015

- Redesigned Sections 200 and 600 of the DDOT Standard Drawings.
- Collaborated with the DDOT's Chief Engineer on draft revisions and approval.
- Prepared training seminars on the updated Standard Drawings.

Engineering Intern, Gordon Contractors Inc., Capitol Heights MD, May 2012 - August 2014

- Prepared structural and architectural bid drawings.
- Organized and inventoried drawing library and records.

Webmaster/Developer, UMD Office of Development and External Relations, Sept. 2011 - Feb. 2012

Engineering and Programing Intern, E-Structors Inc., Elkridge MD, May 2011 - July 2011

- Optimized the "Test and Refurbish" process and inventory database.
- Configured testing equipment and layouts.

Community Service

Treasurer and Web-master, Co-op Housing at the University of Maryland, 2014-2015

Treasurer, University of Maryland chapter of Engineers Without Borders (EWB), 2013-2014

Languages

English (native) - French (native) - Kirundi (basic)