

ABDUL-RASHID ZAKARIA, EIT

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CURRENT RESEARCH SUMMARY

My current research involves modeling nutrient transport (orthophosphates) using Hydrus 1D, I have conducted batch sorption tests and metal testing for soil samples from our sites. Also created digital elevation models (DEM) of our sites (rain gardens) using Terrestrial Lidar surveys. Using the DEMs, I have created hydrological models in ArcGIS Pro and sediment and nutrient transport models with FastMech(iRIC)

EDUCATION AND TRAINING

January 2020-Present **Master of Science:** Civil and Environmental Engineering (Geotechnical Engineering Major)

Villanova University □ Villanova 19085, PA

Expected Graduation: December 2021. **GPA:3.52**

September 2013-July 2017 **Bachelor of Science:** BSc. Geological Engineering

Kwame Nkrumah University of Science and Technology (K.N.U.S.T) □ Kumasi, Ghana

- First Class Honors: 3.64 GPA

WORKING AND INTERNSHIP EXPERIENCES

01/2021 to Current **Graduate Research Assistant**

Institution: **Villanova University** □ Villanova, PA

- Conduct field and laboratory soil tests and water quality analysis
- Manage and supervise undergraduate interns working under project
- Responsible for regular site maintenance
- Planning and conducting LiDAR surveys
- Ensure timely execution of quarterly project deliverables and biweekly reporting of project progress to principal investigators

09/2017 to 12/2018 **Geotechnical Engineer, Intern**

Department of Feeder Roads: Kumasi, Ghana

- Compiling monthly status of road maintenance and construction projects
- Prepared and reviewed plans, specifications, writing and preparing reports for engineering services.
- Performed laboratory tests on samples such as laboratory compaction tests, shear strength and consolidation tests, soil classification
- Applied sound engineering principles and communicated complex engineering issues/concepts to technical and non-technical clients and project teams
- Assist the Civil engineer (Transportation) in culvert sizing and foundation design for feeder road bridges
- Prepared bill of quantities for road contractors
- Evaluation of road contracts bids by private companies

06/2016 to 08/2016

Intern

Ghana Geological Survey □ Ghana, Bolgatanga

- Assisted in field mapping of Upper East region, specifically Bolgatanga East District (Zuarungu)
- Field and laboratory update of traverse maps and identification of minerals found in outcrops during field geological mapping.
- Planning field trips and keeping inventory of field equipment and tools during field surveys

06/2015 to 08/2015

Intern

Engineers-in-Society □ Ghana, Northern Region

- Assisted professional engineers in assessing water supply and sanitation issues in Gusheigu
- Logged (Geological/Geotechnical logging) core borings
- Wrote daily operational report from drilling sites
- Monitored well boring team
- Assisted in initial geophysical field survey of the community

SKILLS

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| <ul style="list-style-type: none">• Proficient with Rock and Soil modeling software such as, RocScience SLIDE2, Dips & Stereo32, DEEPSOIL, RocPlane & Golden Software Surfer• Proficient with Microsoft office suite• Proficient in ArcGIS Pro, HEC-RAS, iRIC and Hydrus-1D, AutoCad, CloudCompare | <ul style="list-style-type: none">• Practical field experience in planning and conducting terrestrial LiDAR scans• Strong project management, communication, and organization skills• Proficient in Java and Python programming |
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POSITIONS AND COMMITTEES

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| <ul style="list-style-type: none">• Finance Chair (2021-2022), Villanova National Society of Black Engineers (NovaNSBE)• Senator (2021-2022), Villanova National Society of Black Engineers (NovaNSBE)• Volunteer Vice Chair (2020 -2021), Engineering Diversity, Equity & Inclusion Committee• Assistant Treasurer (2020 -), Villanova University CEER Graduate Club | <ul style="list-style-type: none">• Caritas Committee Member (2020-), Villanova University• Engineering Well-Being Committee (2020-), Villanova University• Graduate Student Healthcare Taskforce Committee (2020-), Villanova University• Graduate Office Manager (2020 - 2021), Villanova Centre for Resilient Water Systems• Financial Secretary (2016-2017), Legion of Mary, Pax Romana, KNUST |
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CERTIFICATES AND LICENSE

- Engineer Intern Certification from Delaware Association of Professional Engineers
- Fundamental of Engineering Civil:
passed(<https://account.ncees.org/rn/2150990-1380746-e8ae6db>)
- Dam Engineering Certificate from Villanova University (in progress, expected in December 2021)

CONFERENCES ATTENDED AND PRESENTATIONS

- Delaware Valley Geoinstitute (DVGI) Student Night Presentation 2021- One of two student presentations
- AWRA Mid-Atlantic Conference 2021
- MAC Student Presentation Competition 2021
- AASHE's Global Conference on Sustainability in Higher Education (Virtual, 2020)
- Annual VWEA Stormwater Seminar and Vendor Showcase (Virtual, April 2021)

SCHOLARSHIPS OFFERED

- Schnabel Engineering Scholarship Award 2021 (\$2000)
- ASCE Delaware Valley Geo-institute Scholarship 2021 (\$2000)
- Research Assistantship, Villanova University (over \$82,000.00)
- Graduate Tuition Scholarship, The University of Arizona (\$24,349.00)
- Partial Tuition Assistantship, Clarkson University (\$8,328.00)
- Uni-Bank Scholarship, KNUST- Ghana (GHS 2000)

VOLUNTEER WORK

- Planned, organized, and led a Villanova University campus tour of green stormwater management controls for a group of 30 undergraduate students in CEE 3913 - Hydraulic Engineering and Hydrology Lab, Spring 2021
- Proctored the final exam for CEE 2805 – Geology for Engineers, Spring 2021.
- Led a Villanova University campus tour of GSIs for a group of faculties working on sustainability issues, Summer 2021.
- Led the tour for our group's research sites during the Villanova Urban Stormwater Partnership tours
- Supervised students as part of NovaEdge 2021 program of the Villanova University's College of Engineering.
- Helped with pruning, weeding and plant at the Villanova University Campus garden in Summer and Fall 2021.

REFERENCES

Kristin Sample-Lord, PhD, PE, Assistant Professor, Civil and Environmental Engineering
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PROFESSIONAL MEMBERSHIP

Active Member of

- American Society of Civil Engineers (Member Number: 000011952726)
- Deep Foundations Institute
- American Geophysical Union
- America Water Resources Association
- Engineers' Club of Philadelphia
- National Society of Black Engineers
- Ghana Institute of Engineering Students
- Ghana Geological Engineering Students Association