# Diana B. Frimpong

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## **EDUCATION**

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Southern University and A & M College Master of Science in Urban Forestry & Natural Resource Management University of Ghana Bachelor of Arts in Geography and Resource Development Baton Rouge Louisiana, USA GPA: 3.9/4.0 Graduated: August 2022 Accra, Ghana Graduated: May 2018

## **Relevant Courses**

-Coursera Google: Data Analytics Professional Certificate

-ESRI: Spatial Data Science: The New Frontier in Analytics -LinkedIn: ArcGIS Pro Essential Training Certificate

-Experimental Statistics & Design

-Certificate of Drone and Data Technology – Level 1

-Supervised Research Methods

#### RESEARCH INTERESTS

Remote Sensing; Land Use and Land Cover Analysis; Time Series Analysis; Climate Change; Urban Forest Assessment; Image Processing And 3D Modelling

## **KEY SKILLS**

Computer: ArcGIS Pro, ArcGIS 10.1 & ArcGIS Online, MS Office Suite, Google Earth Pro, QGIS Software, Spreadsheets, SQL, R programming, and Tableau.

Key Analytical Skills: Researching, Image processing, Data cleaning, analysis, & visualization

## RESEARCH PROJECT

Accessed the Impact of Land Use and Land Cover Change (LULC) on Air Quality in East Baton Rouge Louisiana Using Earth Observation Techniques || Southern University and A & M College|| Capstone Project July 2022

- Processed high-performance LANDSAT imageries for the LULC change analysis using QGIS software
- Utilized time-series information on carbon monoxide (CO), and nitrogen dioxide (NO<sub>2</sub>) concentrations from the Sentinel -5P archives available on Google Earth Engine for air quality trend analysis.

## **WORK EXPERIENCE**

Graduate Research Assistant, Southern University and A & M College

January 2021 – May 2022

- Conducting research, analyzing data, and Populating literature reviews.
- Assisting with undergraduate events, classes, and GIS labs.
- Performing administrative duties along with other office responsibilities

Geographic Information System (GIS) Intern, Texas Commission on Environmental Quality

June 2021 – August 2021

- Creating a new version of the Annual Enforcement Report in ArcGIS, using ArcGIS Story Maps. This report included photos and maps to make the report much more dynamic.
- Producing a web map that combines the population density in the United States in 2010 with a reference overlay of Excessive Emission Events using ArcGIS online.
- Preparing report data for upload to the Texas Open Data Portal by transferring large amounts of information to spreadsheets. Organizing data related to investigations, notices of violation, supplemental environmental projects, and criminal convictions to make it accessible to the public.

- Created a PowerPoint document for staff who will be using ArcGIS and Story Maps in the future.
- Presenting demos of work to agency staff and management for review feedback.
- Attending Division meetings and Commission Agendas.
- Attended multiple MLEIP events and presentations, which provided insight into environmental regulation in Texas and opportunities to network.

Monitoring and Evaluation Trainee, Petroleum Commission of Ghana

Sept. 2018 - Sept. 2019

- Assisting in organizing meetings between the Monitoring and Evaluation (M&E) Department and both internal and external stakeholders of the Petroleum Commission
- Assisting in developing a monitoring and evaluation checklist for the Inspections and Monitoring of companies within the Upstream Petroleum Industry
- Participating in writing management and feedback reports on companies inspected.
- Evaluating and scrutinizing permit applications for compliance and submitting recommendations to the PC Permit Evaluation Committee.
- Helped produce two research papers for the department.

## LEADERSHIP EXPERIENCE

West African Zonal Representative, African Women In G.I.S

August 2019 – September 2020

- Served as a liaison between the African Women in GIS leadership and zonal members.
- Communicated with zonal members, mentored and encouraged students within West Africa to take up opportunities within the Geographic Information Systems (GIS) space.

Deputy Head of Education Committee, GREDSA – UG

July 2017 May 2018

• Served the mission by assisting in the initiation and implementation of educational policies. I assisted to develop programs and activities that boosted student and lecturer participation in GREDSA association events.

Head Girls Sports Prefect, for Oda Senior High School

March 2013 - May 2014

- Promoted sporting activities and supported the PE department with the organization and running of sporting fixtures.
- Liaising with the Head of PE and PE department with staff assigning duties as necessary. During my tenure, I led a team of sportswomen in attaining 3<sup>rd</sup> place in the women's soccer regional competition in 2014

## PROFESSIONAL AND HONOR SOCIETIES

American Society for Photogrammetry and Remote Sensing African Women in Geographic Information Science (GIS) Louisiana Academy of Sciences May 2022 - Present June 2018 - Present January 2021 - Present

# **GRANTS, AWARDS & ACHIEVEMENT**

- 2022 2nd Place winner for "Outstanding Achievement in Renewable Energy, Natural Resources, Environment, and Climate Change" during Graduate student competitive oral presentation at the Association of 1890 Research Directors Atlanta, Georgia
- 2021 Graduate Research Assistantship, Southern University and A&M College
- 2018 Best stand Assistant, British Council
- 2014 Best Instrumentalist, Oda Senior High
- 2011 Overall Best Student, Dimona (Divine) School

#### TRAINING, WORKSHOPS, AND SEMINARS

- "Use of GIS and Remote Sensing Data to Track Wildfires from Space". 1890 Land Grant Institution Wildland Fire Consortium: Wildfire in Wildland Urban Interface: A Virtual Training Summit.
- The 1890 Research and Innovation Agenda: Pathways to Build Back Better
- "Engaging with Community Mapping using Google Mapping Tools": Geo for Good 2022

#### RESEARCH PUBLICATIONS IN PEER-REVIEWED JOURNALS

**D.B. Frimpong,** Y.A. Twumasi, Z.H. Ning, P.M. Loh, A.B. Asare-Ansah, F. Owusu, J. Oppong, M. Anokye, C.Y. Apraku, R.N.D. Armah and J. Namwamba. (2022). Assessing the Impact of Land Use and Land Cover Change on Air Quality in East Baton Rouge — Louisiana Using Earth Observation Techniques. <a href="https://doi.org/10.4236/ars.2022.113007">https://doi.org/10.4236/ars.2022.113007</a>

Asare-Ansah, A.B., Y.A. Twumasi, Z.H., Ning, **D.B. Frimpong**, F. Owusu, P.M. Loh, C.Y. Apraku, M. Anokye, R.N.D. Armah, J. Atayi, and J. Oppong. (2022). Tracking the Godzilla Dust Plume Using Google Earth Engine Platform. <a href="https://ui.adsabs.harvard.edu/link\_gateway/2022ISPAr46M2...33A/doi:10.5194/isprs-archives-XLVI-M-2-2022-33-2022">https://ui.adsabs.harvard.edu/link\_gateway/2022ISPAr46M2...33A/doi:10.5194/isprs-archives-XLVI-M-2-2022-33-2022</a>

Twumasi, Y., Namwamba, J., Ning, Z., Merem, E., Loh, P., Asare-Ansah, A., Annan, J., Okwemba, R., Yeboah, H., Apraku, C., Mjema, J., Armah, R., Anokye, M., Kangwana, L., Oppong, J., Atayi, J., Ogbu, C., Oladigbolu, O., **Frimpong, D.** and McClendon-Peralta, J. (2022) Analysis of Precipitation Trends and Prediction in Selected Cities in the Southeast Louisiana. *Atmospheric and Climate Sciences*, **12**, 698-727. doi: 10.4236/acs.2022.124039.

Armah, R.N.D., Y.A. Twumasi, Z.H. Ning, M. Anokye, C.Y. Apraku, **D.B. Frimpong**, A.B. Asare Ansah, P.M. Loh F. Owusu. (2022). Application of Remote Sensing in Monitoring Forest Cover Change and Carbon Dioxide Levels at Kisatchie National Forest in Louisiana. <a href="http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-27-2022">http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-27-2022</a>

Twumasi, Y., Asare-Ansah, A., Merem, E., Loh, P., Namwamba, J., Ning, Z., Yeboah, H., Anokye, M., Armah, R., Apraku, C., Atayi, J., **Frimpong, D.**, Okwemba, R., Oppong, J., Kangwana, L., Mjema, J., Njeri, L., McClendon-Peralta, J. and Jeruto, V. (2022) Fusion of Landsat 8 OLI and PlanetScope Images for Urban Forest Management in Baton Rouge, Louisiana. *Journal of Geographic Information System*, **14**, 444-461. doi: 10.4236/jgis.2022.145024.

Twumasi, Y., Ning, Z., Namwamba, J., Asare-Ansah, A., Merem, E., Yeboah, H., Oppong, J., Anokye, M., **Frimpong, D**., Loh, P., Atayi, J., Armah, R., Apraku, C., Oladigbolu, O., Ogbu, C., Njeri, L. and McClendon-Peralta, J. (2022) Bioenergy Crops as a Promising Alternative to Fossil Fuels in Louisiana: A Geographic Information System (GIS) Perspective. *Journal of Sustainable Bioenergy Systems*, **12**, 57-81. doi: 10.4236/jsbs.2022.124005.

Anokye, M., Y.A. Twumasi, Z.H. Ning, C.Y. Apraku, R.N.D. Armah, **D.B. Frimpong**, A.B. Asare-Ansah, P.M. Loh, F. Owusu. (2022). Assessing the Land Cover Change Around Bayou Perot – Little Lake, New Orleans Using Sentinel-2 Satellite Imagery. <a href="http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-15-2022">http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-15-2022</a>

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Twumasi, Y., Merem, E., Namwamba, J., Asare-Ansah, A., Annan, J., Ning, Z., Armah, R., Apraku, C., Yeboah, H., Atayi, J., Anokye, M., **Frimpong, D**., Okwemba, R., Mwakimi, O., Oppong, J., Petja, B., Mjema, J., Loh, P., Kangwana, L., Jeruto, V., Njeri, L. and McClendon-Peralta, J. (2022) Flood Mapping in Mozambique Using Copernicus Sentinel-2 Satellite Data. *Advances in Remote Sensing*, **11**, 80-105. doi: 10.4236/ars.2022.113006.

Apraku, C.Y., Y.A. Twumasi, Z.H. Ning, F. Owusu, M. Anokye, P.M. Loh, A.B. Asare-Ansah, **D.B. Frimpong**, R.N.D. Armah, J. Oppong. (2022). Assessment of Wetland Dynamics and Loss in Terrebonne Parish in Louisiana Using Remote Sensing. <a href="http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-21-2022">http://dx.doi.org/10.5194/isprs-archives-XLVI-M-2-2022-21-2022</a>

Twumasi, Yaw A., Jacob B. Annan, Edmund C. Merem, John B. Namwamba, Tomas Ayala-Silva, Zhu H. Ning, Abena B. Asare-Ansah, Judith Oppong, Diana B. Frimpong, Priscilla M. Loh, Faustina Owusu, Lucinda A. Kangwana, Olipa S. Mwakimi, Brilliant M. Petja, Ronald Okwemba, Caroline O. Akinrinwoye, Hermeshia J. Mosby, Joyce McClendon-Peralta (2021). Time Series Analysis on Selected Rainfall Stations Data in Louisiana Using **ARIMA** Approach. Open Journal of Statistics. (Vol.11 No.5). Page 655-672. DOI: https://doi.org/10.4236/ojs.2021.115039

Twumasi, Y.A., Edmund Chukwudi Merem, John Bosco Namwamba, Jacob Banafo Annan, Tomas Ayala-Silva, Abena Boatemaa Asare-Ansah, Zhu Hua Ning, Judith Oppong, Priscilla Mawuena Loh, **Diana Botchway Frimpong**, Faustina Owusu, Janeth Ernest Mjema, Ronald Okwemba, Olipa Simon Mwakimi, Brilliant Mareme Petja, Caroline Olufunke Akinrinwoye, Joyce McClendon-Peralta, Hermeshia Jonee Mosby (2021). Land Resource Areas and Spatial Analysis of Potential Location of Bioenergy Crops Production in Mississippi. *Journal of Sustainable Bioenergy Systems*, (Vol.11 No.4). Page 187-214. DOI: <a href="https://doi.org/10.4236/jsbs.2021.114013">https://doi.org/10.4236/jsbs.2021.114013</a>

Twumasi, Y.A, Edmund C. Merem, John B. Namwamba, Olipa S. Mwakimi, Tomas Ayala-Silva, **Diana B. Frimpong**, Zhu H. Ning, Abena B. Asare-Ansah, Jacob B. Annan, Judith Oppong, Priscilla M. Loh, Faustina Owusu, Valentine Jeruto, Brilliant M. Petja, Ronald Okwemba, Joyce McClendon-Peralta, Caroline O. Akinrinwoye, Hermeshia J. Mosby. (2021). Estimation of Land Surface Temperature from Landsat-8 OLI Thermal Infrared Satellite Data. A Comparative Analysis of Two Cities in Ghana. *Advances in Remote Sensing*, (Vol.10 No.4). Page 131-149. DOI: https://doi.org/10.4236/ars.2021.104009

#### PUBLISHED ABSTRACTS & CONFERENCE PROCEEDINGS

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Anokye, M., Y.A Twumasi, Z.H. Ning, C.Y. Apraku, R.N.D. Armah, **D.B. Frimpong**, A.B. Asare Ansah, P.M. Loh, F. Owusu. (2022). Effect of Hurricanes on Coastal Ecosystems: A Remote Sensing Study of The Land Cover Change Around Bayou Perut – Little Lake, New Orleans. Page 93 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 – 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: https://www.cp.umes.edu/ard/1890symposium/

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- Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: <a href="https://www.cp.umes.edu/ard/1890symposium/">https://www.cp.umes.edu/ard/1890symposium/</a>
- Loh, P.M., Y.A. Twumasi, Z.H. Ning, J. Oppong, **D.B. Frimpong**, A.B. Asare-Ansah, F. Owusu, M. Anokye, R.N.D. Armah, C.Y. Apraku, J. Namwamba. (2022). Bioenergy: Promoting Efficient Utilization of Agricultural Biomass as Sustainable Renewable Energy. Page 98 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: <a href="https://www.cp.umes.edu/ard/1890symposium/">https://www.cp.umes.edu/ard/1890symposium/</a>
- Owusu, F., Y.A. Twumasi, Z.H. Ning, A.B. Asare-Ansah, J. Oppong, **D.B. Frimpong**, P.M. Loh, C.Y. Apraku, M. Anokye, R.N.D. Armah, J.Namwamba. (2022). Human Activities and Environmental Pollution: Impacts on Health in Baton Rouge, Louisiana. Page 91 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: <a href="https://www.cp.umes.edu/ard/1890symposium/">https://www.cp.umes.edu/ard/1890symposium/</a>
- Apraku, C.Y., R.N.D. Armah, Y.A. Twumasi, Z.H. Ning, F. Owusu, M. Anokye, P.M. Loh, A.B. Asare-Ansah, **D.B. Frimpong**, J. Oppong. (2022). Assessment of the combined effect of biochar and organic manure on physiology and growth of 5 native species in Louisiana. Page 100 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: <a href="https://www.cp.umes.edu/ard/1890symposium/">https://www.cp.umes.edu/ard/1890symposium/</a>
- Oppong, J., Y.A. Twumasi, Z.H. Ning, J.B. Namwamba, C. Akinrinwoye, P.M. Loh, A.B., Asare-Ansah, F. Owusu, R.N.D. Armah, C. Apraku, M. Anokye, **D.B. Frimpong**. (2022). Understanding the Effects of Biochar Application on Soil Properties and Functions. Page 99 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: <a href="https://www.cp.umes.edu/ard/1890symposium/">https://www.cp.umes.edu/ard/1890symposium/</a>
- Asare-Ansah, A.B., Y.A. Twumasi, Z.H. Ning, **D.B. Frimpong**, P.M. Loh, F. Owusu, J. Oppong, M. Anokye, C.Y. Apraku, R.N.D. Armah and J. Namwamba. (2022). Assessing Urban Forests in Baton Rouge: A Case Study of LSU AgCenter Botanic Gardens, Louisiana. Page 95 in the Program and Abstracts Book of the Association of Research Directors (ARD) 20th Biennial Research Symposium, April 2 5, 2022. Atlanta Marriott Marquis Hotel, Atlanta, GA. Website: https://www.cp.umes.edu/ard/1890symposium/
- Anokye, M., Y.A Twumasi, Z.H. Ning, C.Y. Apraku, R.N.D. Armah, **D.B. Frimpong**, A.B. Asare Ansah, P.M. Loh, F. Owusu, J. Atayi. (2022). Applying high-resolution satellite imagery to evaluate small water bodies A case study of East Baton Rouge Parish. *Paper presented at the 96th Annual Meeting of the Louisiana Academy of Science*. Saturday, March 12, 2022, Louisiana State University Alexandria, LA. Website: <a href="https://web.cvent.com/event/c82337fe-6e97-40a7-9a3f-ef94867d4221/summary">https://web.cvent.com/event/c82337fe-6e97-40a7-9a3f-ef94867d4221/summary</a>
- Oppong, J., K. Boison, Y. Twumasi, J.B. Namwamba, C. Akinrinwoye, P. Loh, F. Owusu, A. Asare-Ansah, and **D. Frimpong**. (2022). Flood Risk Assessment Along the Odaw River Basin in the Accra Metropolitan Area, Ghana. *Paper presented at the 96th Annual Meeting of the Louisiana Academy of Science*. Saturday, March 12, 2022, Louisiana State University Alexandria, LA. Website: <a href="https://web.cvent.com/event/c82337fe-6e97-40a7-9a3f-ef94867d4221/summary">https://web.cvent.com/event/c82337fe-6e97-40a7-9a3f-ef94867d4221/summary</a>
- Asare-Ansah, A.B., Y.A. Twumasi, Z.H., Ning, **D.B. Frimpong**, F. Owusu, P.M. Loh, C.Y. Apraku, M. Anokye, R.N.D. Armah, J. Atayi, and J. Oppong. (2022). Tracking the Godzilla Dust Plume Using Google Earth Engine Platform. Paper presented at the Proceedings of the American Society for Photogrammetry and Remote Sensing

(ASPRS) Virtual Conference. March 21 – 25, 2022. <a href="https://my.asprs.org/2022Conference/Conference-Program/2022Conference/Conference-Program---Virtual.aspx">https://my.asprs.org/2022Conference/Conference-Program---Virtual.aspx</a>

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Amankwah, S., F. Owusu, A. Boatemaa, **D. Frimpong**, A. Yeboah, P. Loh, J. Oppong, Y. Twumasi, and, J. Namwamba. (2021). Monitoring the extent of Illegal Mining (Galamsey) in Ghana. Paper presented at the Louisiana Academy of Sciences 95th Annual Meeting program, Saturday, March 13, 2021. Online Hosting by Louisiana Tech University. page 18. Website: <a href="http://laacademy.org/LAS2021/95">http://laacademy.org/LAS2021/95</a> LAS <a href="https://laacademy.org/LAS2021/95">Program Final.pdf</a>

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Convention Theme: Forests For All.

Website: https://www.eforester.org/Safconvention

John B. Namwamba, Yaw A. Twumasi, Aloyce R. Kaliba, Zhu H. Ning, Priscilla N. Kephe, Benir Osimbo, Caroline O. Akinrinwoye, Judith Oppong, Abena B. Asare-Ansah, **Diana B. Frimpong**, Priscilla M. Loh, Faustina Owusu, Ronald Okwemba, Thomas Nyatta, (2021). Integrated Arthropods-Agroforestry Farming for Boosting Food Security and Economic Status of Small-Scale Farm. **Paper ID** #: **383.** Paper presented in the *Society of American Foresters* (*SAF*) 2021 National Convention. November 3 – 6. Virtual Conference. Convention Theme: Forests For All.

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**Frimpong, D.**, A. Asare-Ansah, S. Amankwah, A. Yeboah, P. Loh, F. Owusu, Y. Twumasi, and J. Bosco-Namwamba. (2021). Urbanization and the emergence of slums: Case Study of Jamestown, Accra. *Louisiana Scientist. Bulletin of the Louisiana Academy of Sciences*, Volume 10, Page 5.

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