

Bernard Asare Owusu

Geophysics PhD Student

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School of Earth Sciences
University College Dublin (UCD)
Belfield, Dublin, Ireland

Research Interests

Geophysical-petrological modeling, Surface wave tomography, Geothermal energy exploration

Current Position

PhD Student, Geophysics - Dublin Institute for Advanced Studies, Ireland 09.2024 -
- *Determining subsurface temperature at Krafla through joint geophysical-petrological inversion*

Past Positions

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| Research Assistant, Kwame Nkrumah University of Science and Technology, Ghana | 11.2023-05.2024 |
| Graduate Assistant, Kwame Nkrumah University of Science and Technology, Ghana | 01.2023–09.2023 |
| Research Assistant, Ghana Atomic Energy Commission, Ghana | 09.2020-08.2021 |

Education

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| Ph.D. in Geophysics, University College Dublin, Ireland Thesis: Temperature determination beneath volcanoes using geophysical-petrological modeling. ^[A] Supervisors: Dr. Emma Chambers and Dr. Aline Melo | 2024 - |
| M.Phil. in Geophysics, Kwame Nkrumah University of Science and Technology, Ghana Dissertation: Seismic facies analysis with machine learning for reservoir characterization. Supervisor: Dr. Cyril Boateng | 2023 |
| B.Sc. in Physics, Kwame Nkrumah University of Science and Technology, Ghana | 2020 |

Publications

Peer-Reviewed Journals

1. **Owusu, B.A.**, Boateng, C.D., Asare, V.-D., Danuor, S.K., Adenutsi, C.D., Quaye, J.A. (2024). Seismic facies analysis using machine learning techniques: a review and case study. *Earth Sci Inform.* 17, 3899–3924. <https://doi.org/10.1007/s12145-024-01395-3>

Conference Contributions

Posters

1. **Owusu B. A.**, Chambers E. L., Bean C. J. (2025). Determining the subsurface temperature at Krafla, Northern Iceland through joint inversion of seismic, elevation, heat flow, and thermal data. *Irish Geological Research Meeting*, Trinity College Dublin, Ireland.
2. Chambers, E. L., Fulla, J., Kiyan, D., **Owusu, B. A.**, Grannel, J., Smith, P., Craig, D., Molhoff, M., Raine, R., Blake, S., Bean, C. J. (2024). MOD3LTHERM – MODelling the 3D thermal and Lithospheric Structure of geothermal regions. *National Geothermal Energy Summit*, Dublin Castle, Ireland.

Awards and Funding

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| SFI-IRC Pathway Programme PhD Scholarship | 09.2024 |
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Summer Internship

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| Geophysics Intern, Ghana National Petroleum Corporation, Ghana | 09.2023-10.2023 |
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Service

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| Member, EGU Early Career Seismology Team | 2024 – Present |
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Skills

Languages

- Akan: Native
- English: Excellent

Technical

- Programming: Python, MATLAB, Fortran, Shell Scripting
- Seismic Processing and analysis
- Seismic Interpretation: Petrel, OpendTect, IHS Kingdom Suite
- GIS: Generic Mapping Tools (GMT)
- Computing: Linux environments

Professional Society Membership

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| 2024-Present | Student Member, Society of Exploration Geophysicists (SEG) |
| 2025-Present | Member, Geothermal Rising |