

Tectono-stratigraphic evolution of the conjugate West Africa Mauritania-Senegal-Guinea Bissau (MSGBC) and Nova Scotia continental margins.

Fully funded PhD studentship as part of the *North Africa Research Group*

Host University: University of Manchester

Supervisors: Prof Jonathan Redfern, Prof Mads Huuse

Data Sponsors: TGS with others

A fully funded PhD studentship to start in May 2017 to examine the tectono-stratigraphic evolution of the Atlantic margin from Mauritania through Senegal to Guinea-Bissau, also integrating data from the conjugate margin of Nova Scotia. The study will focus on refining our understanding of the structure, stratigraphic architecture, age relationships, palaeogeography, facies trends and igneous intrusions styles and ages, and evolution across the margin. The work will integrate data from existing wells (cuttings data and wireline log data), limited outcrop studies and analysis of onshore / offshore seismic and gravity / magnetic data to define stratal relationships and seismic facies.

Key areas for study include: interaction between slope and shelf areas and transform faults and igneous centres through time; the syn-rift to drift transition; the base of Jurassic carbonates, the top of the carbonate platform including key structures, canyons, karst, reefs; gross architecture and internal facies of Cretaceous fans and shelfal systems; Cenozoic shelf-slope stratigraphy including canyons, mass transport deposits, gullies, sediment waves; igneous intrusions and extrusions.

The North Africa Research Group (NARG) is an integrated research group combining the strengths of the Universities of Manchester and Tu Delft, funded by a large consortium of industry companies. Currently, we support 9 PhDs undertaking extensive projects across North Africa, and we have recently embarked on a major series of studies examining Mesozoic depositional systems on/offshore western Morocco along the Atlantic seaboard. Morocco, Mauritania, and Senegal, together with the conjugate margin in Nova Scotia, are areas of active oil and gas exploration, with significant recent oil and gas discoveries, and the results from this study will have an important input to understanding the petroleum system and development of the passive margin.

We seek a highly motivated candidate with the following skills:

- 1st , high 2.1 or masters in marine geology / geophysics / petroleum geoscience
- good background in geophysics, particularly seismic interpretation, and experience applying seismic interpretation to structural and stratigraphic problems at undergraduate or master or professional level
- knowledge of passive margin evolution and deepwater depositional systems
- knowledge of fluid flow analysis using seismic data
- Independent worker with good organizational skills
- team working skills, with ability to integrate with other team members and industry partners

The Basin Studies and Petroleum Geoscience Group at Manchester has 12 academic staff and over 35 PhDs, and offers access to world-leading facilities and research expertise for stratigraphic and sedimentological studies. Training is offered through specialist seminars within the group and the opportunity to take selected masters courses from the Petroleum Geoscience MSc. The successful candidate will also have opportunities to interact with and present results to industry partners, and will typically undertake a 3-month internship with one of our sponsor companies

We have extensive facilities, as may be expected in a world-leading University, including SEM, cathode luminescence, x-ray tomography, and an industry standard petrophysical laboratory. The student will also access leading facilities for quantitative outcrop data collection, including LiDAR, a photogrammetry drone, and a full suite of software available to the group; Polyworks™, Petrel™, ArcInfo™ Geoteric™ among others. The student will also utilise our in-house software Virtual Reality Geological Studio (VRGS), which enable rapid integration and interpretation of acquired digital outcrop data, and transfer to Petrel or similar software for mapping and interpretation.

Full scholarship: 3.5 years funding, includes all fees, living allowance and field expenses.

Application: please apply online at: <http://www.manchester.ac.uk/study/postgraduate/how-to-apply/> quoting this PhD advert from NARG and the lead supervisors Prof Jonathan Redfern and/or Prof Mads Huuse. Please email: jonathan.redfern@manchester.ac.uk if you have any specific questions.

Application should be submitted by February 20th 2017. Selected candidates will be called for interview shortly after this.