Dowla, N., Mann, P., and Bird, D. E., 2016, **Gravity and magnetic investigation of the south-central Atlantic margin of the USA (offshore Florida to South Carolina) and its west Africa conjugate margins (The Gambia to Mauritania)** (abstract): American Association of Petroleum Geologists, Annual Meeting.

The outer continental shelf of the US East Coast, and northwest Africa are two underexplored conjugate margins with predicted reserves for the US East coast to be 3.3 billion barrels of oil and 32 TCF of gas within Cretaceous and Jurassic carbonate reservoirs charged by Jurassic carbonate source rocks. Predictions for the less studied conjugate margin of NW Africa vary widely given uncertainties in source rocks ranging in age Triassic to Oligocene and potential reservoir rocks ranging in age from Triassic to Late Cretaceous. In order to better estimate the hydrocarbon potential for both conjugate margins, crustal geometries of both conjugates have been compared to assess which margin is more favorable for hydrocarbon accumulation - or if both margins have equivalent potential. Margins with more favorable potential are generally considered those with wider rift zones with thicker overlying sag basins and thicker, overlying passive margin section. In the parlance of asymmetrical rifting, the margin with a wider rift zone is called the upper plate, and the margin with a more narrow rift zone is called the upper plate. A series of eight 2D gravity profiles were created using 722 refraction stations gathered from literature and constrained with twenty DSDP, IODP and ODP wells, as well as previously interpreted seismic data. These are integrated with 2014 satellite-derived worldwide gravity grid, in order to model the outer continental shelf basins up to a depth of 40 km. Previous workers proposed lower plate / upper plate geometries across the margins, with the offshore east coast USA acting as the lower plate, and offshore west Africa acting as the upper plate. Our new gravity study indicates the wider, rifted margin of the east coast USA may be more favorable for hydrocarbons than the narrower margin of NW Africa.