

work for structural and stratigraphic controls for the Jeanne d'Arc and other basins of the Newfoundland Grand Banks. The three sequential rift phases are NW-SE extension in the Late Triassic/ Early Jurassic, E-W extension in the Late Jurassic/ Early Cretaceous and Mid-Cretaceous NE-SW extension.

Geophysical evidence indicates development of several NW-SE transfer faults in the Jeanne d'Arc basin. The initial rift basin architecture appears to extend northward beyond the Jeanne d'Arc into the Orphan basin across a transfer fault that lies along the Cumberland Belt. This transfer fault shows at least two periods of reactivation causing strike slip movement in the Late Jurassic/ Early Cretaceous and Mid Cretaceous times. The timing of development of the Orphan basin suggests a similar structural and stratigraphic history to other basins of the Grand Banks.

New interpretations suggest that the transfer faults segmented the Jeanne d'Arc and controlled initial basin development offshore Newfoundland. Subsequent multiple reactivation of the transfer faults caused multiple episodes of basin inversion. This new insight suggests a more complex structural and stratigraphic basin evolution for offshore Newfoundland.

**Basin segmentation, architecture and inversion
on a passive margin, offshore Newfoundland
(poster presentation)**

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The Mesozoic rift basins of offshore Newfoundland have undergone multiple rift episodes. Three documented phases of rifting coupled with subsidence have provided the frame-