## Session proposal – GSA Annual meeting 2012, Charlotte

# Divided oceans and connected continents: Advances in geology and paleontology of the Tropical Americas

**Session chairs:** Austin Hendy, David Farris, Carlos Jaramillo

**Brief description of the session for publication in GSA Today:** The geological and fossil record of the Neotropics is critical to understanding major events in biogeography, evolution, and climate change. This session explores diverse new data and interpretations on the Cenozoic history of this region.

**Rationale for the session:** Despite its high modern-day biodiversity, the fossil record of the Neotropics is poorly sampled relative to higher latitudes as a result of both sampling and preservational biases. Nevertheless, the fossil record of this region is crucial for understanding major events in biogeography, evolution, climate change, and the development of present-day terrestrial and marine environments.

The session will present some of the more significant paleontological discoveries of the past several years that have resulted from excavation, expansion, and modernization of the Panama Canal, as well as new terrestrial fossil faunas and floras coming to light in northern South America and throughout the Caribbean. These developments not only contribute to our knowledge of past Neotropical biodiversity but also allow us to revisit more fundamental questions on evolution and biogeography in the Tropical Americas.

In addition, this session will highlight a number of recent geological studies on the origin of the Isthmus of Panama and its ultimate connection to South America. Recent studies on geochemical and tectonic changes in the Panama arc and the northern Andes of South America suggest that the widely accepted rise of the Isthmus of Panama and closure of the Central American Seaway may have occurred earlier than previously thought. The timing of these events is significant given that they are thought to have had wide-ranging oceanic, climatic, biologic, and tectonic implications.

This session aims to present an exciting and diverse range of new geological, paleoceanographic, paleontologic, and molecular data that might allow us to reevaluate how Neotropical paleogeography, paleoenvironments, faunas, and floras have changed through the Cenozoic.

**Program format or relationship to other potential sessions:** One oral session (possibly half day, but probably full day, depending on demand) and an associated poster session are suggested.

**Discipline categories:** biodiversity, paleoecology, tectonics