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Reconstructing the Supercontinents: Connecting the Pieces of the Puzzle

by

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ABSTRACT

As the continents move across the surface of the earth, they periodically collide to form larger "supercontinents", such as Pangea, which formed 250 million years ago. This behavior appears to be cyclic; a supercontinent breaks apart, the fragment continents separate and then collide together in a different configuration to form another supercontinent. Reconstructing these supercontinents is like putting the pieces of a jigsaw puzzle together, using geologic similarities to determine which pieces were once connected. A combination of evidence from U/Pb geochronology, isotope geochemistry, structural geology and igneous and metamorphic petrology were used to test part of a reconstruction for the supercontinent that formed one billion years ago, Rodinia. These data suggest that western South America collided with the southern-Appalachian region of North America approximately one billion years ago during the amalgamation of Rodinia, and a piece of South America, now the basement of the Blue Ridge Province, was left behind in North America upon the break-up of Rodinia.

BIOGRAPHY

Staci Loewy is from upstate NY, where she earned her bachelors degree in geology from the State University of New York at Buffalo. She earned her M.S. degree in 1995 from Penn state University where she studied brittle fracture mechanics of shales and siltstones in the Appalachian basin of western New York. She earned here Ph.D. in 2002 from the University of Texas at Austin, where she studied plate tectonics, U/Pb geochronology and isotope geochemistry. She stayed on at UT Austin as post doc for a year and a half, managing the U/Pb lab facility. In 2004, she took a position at the University of North Carolina at Chapel Hill, where she taught classes and managed the U/Pb and mass spectrometer lab facilities. In the Fall of 2006, she joined the faculty at CSUB as a structural geologist and next quarter she will be teaching a graduate class in plate tectonics.