



[Start](#) | [Grid View](#) | [Author Index](#) | [View Uploaded Presentations](#) | [Meeting Information](#)

GSA Connects 2022 meeting in Denver, Colorado

Paper No. 99-23

Presentation Time: 9:00 AM-1:00 PM

RECONCEPTUALIZING THE LATE PALEOZOIC GLACIAL DEPOSITS OF THE SANTA FÉ GROUP, SANFRANCISCANA BASIN, SOUTHEAST BRAZIL (MINAS GERAIS)

MCNALL, Natalie, ROSA, Eduardo Menozzo and ISBELL, John L., Department of Geosciences, University of Wisconsin-Milwaukee, Milwaukee, WI 53211

Highly complex glacial dynamics produced an intricate mosaic of glacial strata and erosional landforms throughout Gondwana during the late Paleozoic Ice Age (LPIA; ~362-256 Ma), the Phanerozoic's longest and most severe icehouse interval. An extensive gap in understanding the extension of ice masses in western Gondwana remains due to glacial successions in several LPIA basins being only briefly explored and poorly understood. In such a way, late Paleozoic glacial strata in the Sanfranciscana Basin (SE Brazil) have only been mapped and interpreted at reconnaissance level in the 1990's. Permo-Carboniferous glacial strata of the Santa Fé Group and erosive features on Precambrian basement were interpreted as glacioterrestrial sedimentation (i.e., subglacial tillites, glaciofluvial, glaciolacustrine, and periglacial aeolian) originating from the advance and retreat of a glacier. Moreover, the location of the ice-spreading center is ambiguous, as opposing ice-flow directions were interpreted (NE-SW versus SW-NE) based on the same glacial erosional surface. New field exploration, facies analysis, and the investigation of several unprecedented striated surfaces, allow for new conceptions regarding the Santa Fé Group's depositional environments, stratigraphy, and glacial history. Precambrian basement is shaped into numerous whalebacks containing superimposed striations, chatter-mark trails, and crescentic fractures and gouges. Mapped elevation differences between erosional landforms suggests the glacial landscape embodied a glacial trough, shaped under thick ice, flowing to the southwest. The Santa Fé Group was deposited in marine to glaciomarine settings as it is comprised of debris flows, turbidite fans, and mass-transport deposits derived from deltaic and outwash systems as well as offshore shale. Glacial influence within the succession is indicated by abundant striated and faceted limestones, interpreted as ice-rafted debris. These findings contrast previous interpretations that suggested glacioterrestrial sedimentation and allow a more accurate conceptualization of the glacial dynamics in the Sanfranciscana Basin. Thus, mending a regional gap for a thorough and complete mosaic of the LPIA in western Gondwana.

Session No. 99--Booth# 116

[T22. Sedimentary Geology Division/SEPM Student Research Poster Competition: Dynamics of Stratigraphy and Sedimentation \(Posters\)](#)

Monday, 10 October 2022: 9:00 AM-1:00 PM

Exhibit Hall F (Colorado Convention Center)

Geological Society of America *Abstracts with Programs*. Vol 54, No. 5
doi: 10.1130/abs/2022AM-378034

© Copyright 2022 The Geological Society of America (GSA), all rights reserved. Permission is hereby granted to the author(s) of this abstract to reproduce and distribute it freely, for noncommercial purposes. Permission is hereby granted to any individual scientist to download a single copy of this electronic file and reproduce up to 20 paper copies for noncommercial purposes advancing science and education, including classroom use, providing all reproductions include the complete content shown here, including the author information. All other forms of reproduction and/or transmittal are prohibited without written permission from GSA Copyright Permissions.

[Back to: T22. Sedimentary Geology Division/SEPM Student Research Poster Competition: Dynamics of Stratigraphy and Sedimentation \(Posters\)](#)

[<< Previous Abstract](#) | [Next Abstract >>](#)
