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PII: S0012-8252(16)30361-0
DOI: doi: 10.1016/j.earscirev.2016.10.006
Reference: EARTH 2332

To appear in: *Earth Science Reviews*

Received date: 7 June 2016
Revised date: 14 October 2016
Accepted date: 17 October 2016

Please cite this article as: Bottjer, David J., Geobiology and palaeogenomics, *Earth Science Reviews* (2016), doi: 10.1016/j.earscirev.2016.10.006

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Keywords: geobiology, palaeogenomics, gene regulatory networks, biomineralization, mass extinction, bioturbation

ABSTRACT

Geobiology is centered on interactions of the biosphere with the atmosphere, hydrosphere, and lithosphere. In deep time geobiology has focused on critical intervals of change for Earth and its biota. Such geobiological studies include data from palaeobiology, geochemistry and sedimentary geology within an interdisciplinary framework. Palaeogenomics has a variety of research agendas, and one of them is to understand the genes involved in key changes in the evolutionary history of life and when those genes and their interactions first evolved. The combination of geobiology and palaeogenomic studies is a powerful approach which leads to a more fundamental understanding of how Earth and life have changed through time. For example, linking palaeogenomic studies of biomineralization genes in modern organisms and when they first evolved in the Cambrian with geobiological studies of the impact this had on the production of carbonate sedimentary facies such as encrinites and the development of the Neritan ocean provides a unique perspective on how genes