



## **NanoSIMS on Carbonates: From the Solar Nebula to the Modern Coral Reef (EMU Research Excellence Medal Lecture)**

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Geo- and cosmochemists have always been at the cutting edge of new analytical technologies that enable them to penetrate closer to the core of important problems, or define new frontiers. The NanoSIMS is a newly developed ion microprobe that combines extreme spatial resolution (down to 50 nanometers) with high analytical sensitivity, high mass-resolution and multi-collection, and therefore represents a major technological development to the Earth Sciences. This talk will present examples of scientific problems to which the NanoSIMS contributes fundamentally. The problems to be presented involve carbonates and span all of geological time: From the formation of carbonates during parent body metamorphism in the earliest solar system to the formation of carbonates by corals in modern coral reefs.