



**UNIVERSITÉ  
DE GENÈVE**

**FACULTÉ DES SCIENCES**  
Département des sciences  
de la Terre

*Seminar of the Department of Earth Sciences, UNIGE*

*Friday, April 24, 11h15 in Room 001*

*Rue des Maraîchers 13, CH-1205 Genève or via [Zoom](#)*

## ***Corals Are Great Chemists***

***Dr. Gavin Foster***

***University of Southampton***

Tropical coral reefs are the ocean's most biodiverse ecosystem, home to over a million species and providing trillions of dollars of ecosystem services each year. All these ecosystem services are dependent upon the 3D framework of the reef that is constructed by hermatypic scleractinian corals. Ocean warming and ocean acidification are causing a wide range of negative impacts on marine organisms and ecosystems, and reef-building corals are no exception. Yet exactly what the future holds for tropical corals and the reefs they support is unclear, in no small part, due to the uncertainty surrounding the mechanisms by which scleractinian corals make their skeletons.

In this talk I will use novel experimental systems, 3D CT and fluorescent imaging and 2D geochemical mapping of coral skeletons to try and understand how a coral builds its skeleton. What this reveals is that corals act as skilled chemists carefully modifying the calcifying environment to favour the extension and thickening of their skeletons. These processes, because they are physiochemically controlled, follow the same thermodynamics as inorganic aragonite growing in the laboratory providing us with a robust framework to explore what the future holds for these key ecosystem engineers.