

Svetlana V. Kotelnikova, Ravindra Naraine, Thomas Smith, Sara Jägevall, Lotta Hallbeck, and Karsten Pedersen, 2008, "The microbial diversity present in a tropical circumneutral iron spring in Grenada," *The 16th CAS Biennial Conference on Science and Technology Conference Proceedings*, pp.1-470.: *Vehicles for Sustainable Economic Development in the Caribbean: Grenada*; 11-13 October, pp.202-210.

Microbial evolution has allowed for microbial adaptation to many diverse and harsh environments. As a result, the microbial diversity varies spatially, depending on the environmental pressures that are limiting. This research focused on uncovering the microbial diversity present in a Tropical Iron Spring in the Caribbean island, Grenada. Any microorganism from this island is expected to be genetically unique due to its spacial isolation and its multi-metal resistance to particularly high concentrations of iron, aluminum, zinc and magnesium (Kotelnikova, S., 2007).

The diversity was discovered using both culture dependent and culture independent techniques. Microorganisms were visualized and quantified using Florescence *In Situ* Hybridization in conjunction with both florescent and light microscopy. Culture based analysis was aimed to isolate iron oxidizing autotrophic microbes. Temporal Gradient Gel Electrophoresis (TGGE) and Cloning were used to screen and isolate individual microbial species.

Results indicated possibility of microbes involved in carbon cycling, nitrogen cycling and iron cycling. In addition, the results point to the likelihood of a microbial community that is self-sustained or requires very few external resources. Such microbial ingenuity may help to provide greater knowledge on the aspects of energy conservation and mineral recycling.