

EVENT REPORTS

In Search of Metalloid-Resistant Microbes in Antarctica

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In furtherance of a decade-long collaboration with Chilean biochemists and microbiologists, Dr. Tom Chasteen, analytical environmental chemist, travelled to Antarctica to sample environments which might contain bacteria resistant to toxic metals and metalloids. With a Chilean doctoral student name Juan Pablo Monrás and travelling via airplane, Chilean naval frigate, zodiacs, and foot, Chasteen helped collect water, soils, and sediments during an

excursion in Antarctica's South Shetland Islands and on the Antarctic Peninsula. The trip began in the late austral summer and lasted 15 days (February 19 through March 5), originating in the Chilean gateway to Antarctica, Punta Arenas, on the shores of the Strait of Magellan. The samples they collected in Antarctica will be examined for bacteria that can biologically produce nanoparticles, which are small, fluorescent, so-called quantum dots that can

Figure 1. Chasteen standing in front of the Collins Glacier on the western end of King George Island, Antarctica (there's another Collins glacier in Antarctica near the Prince Charles Mountains). The three visible dust bands can reasonably be inferred as originating from past volcanic eruptions from Deception Island, a caldera that is 125 km to the southwest.



Collins Glacier © T.G. Chasteen, Photograph by Juan Pablo Monrás, GPS coordinates: -62 10 01, -58 51 11

be used in biomedical, pharmaceutical, energy, and catalytic applications. Promising microbes that are isolated at the University of Chile and Andrés Bello University in Santiago, will be brought to Chasteen's lab in Texas for analysis by gas chromatography with fluorine-induced chemiluminescence detection.

Funding for the trip came from the Chilean Antarctic Institute (INACH), the Chilean Na-

tional Commission for Scientific and Technological Research (CONICYT), and the Chilean National Fund for Scientific and Technological Research (FONDECYT). This scientist's take on the day-by-day events of this exciting yet chilling field trip are detailed in his blog including photos and videos links: http://www.shsu.edu/chm_tgc/Blogs/AB0.html.

Thomas G. Chasteen completed his Ph.D at the University of Colorado, Boulder in 1990 under the direction of John Birks. His dissertation was completed under the additional supervision of Pat Zimmerman then at the National Center for Atmospheric Research in Boulder and Ray Fall at CU, Boulder. After serving as a Visiting Assistant Professor at Saint Lawrence University in 1990-1991, he joined Sam Houston State University's Department of Chemistry in 1991, became Associate Professor of Chemistry in 1996, and Professor in 2002. He teaches undergraduate courses in analytical and environmental chemistry and graduate courses in analytical chemistry and separation science.