

Consortium for Ocean Leadership Project

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The *Integrated Ocean Discovery Program Leg 352* ocean-drilling cruise seeks to answer key questions about the initiation of subduction, the development of arc crust, and the origins of ophiolites through the examination of the earliest volcanic products of the Izu-Bonin subduction system. The cruise will drill crustal sections in two locations along the seaward margin of the Bonin Ridge, ~1200 km SSE of Tokyo, Japan, along the Izu-Bonin arc.

We expect to recover two unique types of volcanic rock: a) Boninites, which were first identified in dredges from this region, and are chemically unusual, glassy lavas that are found only on oceanward margins of volcanic arcs; and b) "Forearc Basalts" a new kind of volcanic rock, recently identified in Guam, that is hypothesized to be the very first lava type erupted as an oceanic plate founders and begins to sink back into the earth's mantle during subduction.

Dr. Ryan will be the Inorganic Geochemist on the cruise, and will run the ship's onboard analytical laboratory, and will be responsible for chemically characterizing sampled of the rocks we drill, so as to identify these different volcanic rock types and document changes in their compositions.