

GRAND JUNCTION GEOLOGICAL SOCIETY

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DECEMBER MEETING

WEDNESDAY 13, 2017

Joint meeting with the CMU Geology Students

7:30 PM

Saccomanno Lecture Hall

(In the Wubben Science Building)

Donald E. Ranta

Former President & CEO of Rare Elements

Resources

Will Speak on

**“ An Explorationist’s Odyssey Following Trends:
From Molybdenum to Gold to Rare Earths”**

Abstract on Reverse, Guests are Welcome

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Your 2018 Dues-\$15.00-are due now. If you have not paid, make your check to the GJGS Foundation for a tax deduction as it is a non-profit organization. Bring to meeting or mail to GJGS, P O Box 4045, Grand Junction, CO 81502

Why an Odyssey? It all depended on the evolving favorability of mineral commodities based on their economics—mainly *Price* and *Demand*. Rising prices of commodities greatly spur exploration for specific types of mineral deposits thus establishing a trend, and new flexible exploration models focus those efforts. The progression in my Odyssey began with *Molybdenum* in the 1970s, to *Gold* in the 1980s and 1990s, and *Rare Earths* after 2005. The ore deposits to be discussed are Mt. Emmons Moly, Sleeper Gold, McDonald Gold, and Bear Lodge Rare Earths. The author was deeply involved in the exploration and evaluation of each of these deposits.

Molybdenum was a hot commodity as moly prices rose in the 1970s following the Henderson discovery in the 1960s. As a result of the increased exploration activity, the high-grade Mt. Emmons molybdenum deposit was discovered in 1977 near Crested Butte by AMAX. Mt Emmons is a typical Climax-type molybdenum deposit characterized by a quartz-molybdenite stockwork that caps and surrounds the apex of multiple-intrusions of highly evolved calc-alkaline granite porphyries.

During the early 1980s moly prices collapsed and **gold** prices settled at a relatively high level, so exploration efforts were shifted. Low-grade gold mineralization at the Sleeper project in northwestern Nevada was defined by AMAX, and a decision was made in 1984 to drill the gravel-covered pediment near some mineralized outcrops. Completely covered high-grade gold veins were discovered within a low-sulfidation volcanic-hosted epithermal system.

Continued emphasis on **gold** by Phelps Dodge in Montana resulted in the 1989 discovery of the large low-grade McDonald gold deposit, which has at least 10 million ounces of minable gold. Recognition of a Round Mountain-type mineralized system within a flat-lying volcanic unit provided the breakthrough in conceptualizing an ore target. McDonald is a disseminated low-sulfidation epithermal deposit contained primarily within a permeable ash-flow tuff volcanic unit.

Rare Element Resources acquired the Bear Lodge **rare-earths** prospect in 2000 and slowly began assembling the property position followed by limited exploration. In 2007 a larger drilling program was devised to test the near-surface oxide mineralization, and a metallurgical test program of the oxide mineralization led to a breakthrough in evaluating the rare-earths deposit. The Bear Lodge deposit has one of the highest grades and best values per ore ton of any of the most advanced and largest rare-earths deposits in the world.