

**Abstract ID: 129**

**Title: NEW DISCOVERIES AND EXPLORATION FRONTIERS AT THE BEGINNING OF THE 21ST CENTURY**

**Student:** No

**Topic:** Economic Geology

**Medium:** Invited Oral Presentation

**Author 1 (CONTACT AUTHOR)**

Name: Murray W. Hitzman

Org: Colorado School of Mines

Country: USA

**Keywords:** exploration, mergers, personnel

Abstract: The dawn of the 21st century has witnessed the mining industry enter another of its cyclical booms. The past decade has seen several important new discoveries, perhaps the most significant being the Oyu Tolgoi porphyry copper deposit in Mongolia. As in the past, junior companies, many Canadian, are conducting much of the exploration. While new areas have shown success (Mongolia, China, African Sahel), older districts continue to provide discoveries as well (Arizona, Peru, Congo). Changes in commodity prices, most dramatically in uranium, have created vast frontiers throughout the world for additional successes. The opening of new exploration frontiers at the start of the millennium has been followed by a slow contraction, notably in Mongolia due to new legislation, but also in Russia and to some extent Central Asia.

New exploration frontiers for the future will include a critical appraisal by the industry of its most economic targets. With increasing fuel and materials costs, better accounting of (and payment for) all forms of waste (including greenhouse gases), and growing public opposition to mining, the types of deposits that we exploit need to be carefully reviewed. Environmental models of ore deposit types will take on increasing importance in the decades ahead and new mining methods will be required to allow permitting of new mines, to continue to cut production costs, and to limit long term legal and environmental liability. The companies that move aggressively into the new era of mining will have a better chance at discovery of new, more economic deposits.

The real exploration frontier, however, is personnel. Our workforce in industry, academia, and government is ageing. In the western world we are not attracting enough of the best and the brightest to our field and all the new technology cannot make up for this fact. New talent is forthcoming from the BRIC (Brazil, Russia, India, China) countries but training there is not yet up to the standards required by industry and may not be for at least a generation. The real frontier for the mining industry will be bridging this gap of one or two generations of talent with enough successful ore finders.