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MDRU, BRIMM, IDEON, IMDEX & NSERC partner on the Value of Ore Body Knowledge

Vancouver, Canada (October 25, 2023) - The Mineral Deposit Research Unit (MDRU) and the Bradshaw Research Institute for Mining and Minerals (BRIMM) are pleased to announce the award of \$599,200 from the Natural Sciences and Engineering Research Council of Canada (NSERC) Alliance program, matching \$300,000 in industry cash contributions from IMDEX and Ideon Technologies. The project "Determining the full value of ore body knowledge in Mineral Exploration and Mining" will provide a geostatistical and financial framework to allow quantification of the financial costs, benefits, and risk reduction associated with collecting ore body knowledge during mineral exploration, mineral resource definition, and mining.

The project builds upon recently published work by Dr. Andrew Gillis with BRIMM Director John Steen, which demonstrates that much of the poor financial performance of the mining sector can be attributed to underinvestment in geological information. Steen says, "We have the evidence that ore-body knowledge creates value for mining companies, but this project will show how much value can be attributed to geological investigations through the life of the mine".

MDRU Director Shaun Barker, project lead said that "This is such an exciting time to be a geologist, with almost endless technologies that improve our understanding of the rocks we encounter. As geologists, we value as much information about the rocks that we explore and mine as possible, but we typically are unable to place value on that information –this project seeks to fill that gap in knowledge so that geologists can quantitatively assess which datasets will most impact the value of their project."

Global mining-tech company IMDEX is leading the development of innovative ore body knowledge technology including through its IMDEX BLAST DOG™, a semi-autonomously deployed borehole sensing and physical measurement technology that provides near real-time ore body knowledge and physical information of the blast hole. IMDEX Chief Geoscientist Dave Lawie said the research findings would contribute to knowledge on the economic benefits of enhanced OBK, promote adoption of new technologies, and help define future research and development directions in the mining industry.

Ideon Technologies is a Vancouver-based scale-up that uses the energy from supernova explosions in space to provide x-ray-like visibility down to 1km beneath the Earth's surface. The company is addressing the worldwide shortage in critical mineral supply by helping mining companies enhance their ore-body knowledge and precisely target high-recovery, low-waste deposits. "Mining companies make billion-dollar decisions based on fractional knowledge of what's beneath the surface. It's risky, costly, and it's not yielding returns," said CTO Doug Schouten. "This collaboration addresses the underlying problem of geological uncertainty. Using new subsurface intelligence to provide confidence in ore body characteristics, industry can better inform mine planning, extend mine life, leverage deposits previously considered inadequate, and achieve greater efficiencies across the entire mining value chain."

The research program, which will run till late 2025, will support 3 postdoctoral researchers and 2 Masters students and will involve close collaboration across the research team including Drs. Barker and Steen, Dr. Cassidy Harraden (postdoctoral researcher at MDRU), Asst. Prof. Lindsey Heagy (Dept. of Earth, Ocean and Atmospheric Sciences), Dr. Dave Lawie (IMDEX) and Dr. Doug Schouten (Ideon Technologies).