

2004 SME Pittsburgh Section John T. Boyd Memorial Young Engineer Award

Robert B. Krog
National Institute for
Occupational Safety and
Health



Mr. Robert B. Krog is the recipient of the Society for Mining, Metallurgy, & Exploration, Inc. (SME) Pittsburgh Section's 2004 John T. Boyd Memorial Young Engineer Award. This award is given to bring recognition of engineering professionalism to young people working in the coal industry.

Robert was introduced to the mining industry while graduating with a Bachelors of Science degree in Geology from Queen's University located in Kingston, Ontario, Canada in 1995. A Bachelor of Science degree in Mining Engineering in 1998 and a Master of Mining Engineering followed in 2000 both from Queen's University.

Robert's master mine ventilation thesis determined the current and future ventilation concerns and upgrades for a deep 3,300 ton/day gold mine located in Ontario. The mines initial \$1.5 million capital ventilation upgrade was reduced to \$400,000 while lowering operating cost by the conversion and upgrading of old backfill raise. Airflow increase by 15% while allowing mining of a new high grade ore zone located outside of the current ventilation system.

After graduation in 2000, Robert worked for Itasca Canada, located in Sudbury, Ontario. Ground control damage mapping and modeling for a large 10,000 ton/day base metal mine located 6900 ft underground was conducted. Production extraction rate, ore recovery, and ground control rehabilitation costs were collected to help determine the preferred mining sequence for the ore zone located between 6000 to 6800 ft underground. This information was used to convince the mine to change from a tertiary mining sequence to a primary/secondary extraction method to improve ground control and miner safety. The mine is currently planning to extend production down to 9800 ft level.

Robert then worked on a mining through paste backfill development project at a 9500 ton/day base metal mine. The mature mine was concerned about large scale ground movement at it existing access drifts associated with a 370,000 ton regional de-stress mass blast.

A secondary escape way that would be unaffected by ground movement was required and development through a paste backfilled stope was conducted.

In 2001, Robert joined the National Institute for Occupational Safety and Health located in Pittsburgh and has work primarily in ventilation of large opening mines and methane drainage of coal mines. Robert authored and presented a paper called "Ventilation Planning Layouts for Large Opening Mines" at the 2004 SME Annual Meeting. Robert is currently working on a statistical analysis of all frictional ignition in underground coal mines from 1983-2003.