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**Mining Engineering, Seismicity in Mines, Geomechanics, Ground Control**

**Expertise** Seismicity and Rockbursting in Mines, Mine Design, Stope Design, Ground Support

**Education** Ph.D. (Civil and Resource Engineering), in progress  
University of Western Australia  
M.A.Sc. (Mining Engineering), 1988  
B.A.Sc. (Mining Engineering), 1986  
University of British Columbia

**Professional Experience**

2006 - Present *Itasca Consulting Canada, Inc., Sudbury, Ontario, Canada*  
*Senior Geomechanics Engineer*

1999 - 2006 *Australian Centre for Geomechanics, Perth, Australia*  
*Project Leader – Rockbursting and Seismicity in Mines*

1995 - 1999 *Mount Isa Mines, Mount Isa Australia*  
*Senior Rock Mechanics Engineer, Rock Mechanics Superintendent*

1992 – 1995 *Noranda Inc, Brunswick Mining, Bathurst, N.B., Canada*  
*Ground Control Engineer*

1988- 1992 *Noranda Inc., Noranda Technology Centre, Montreal, Canada*  
*Geomechanics Engineer, Project Leader – Mine Seismicity*

**Project Experience**

*Seismicity and Rockbursting in Mines:* Design and use of seismic monitoring in underground, open-pit, and caving mines. Seismic hazard assessment and proactive application of seismic monitoring data. Rockburst investigations. Applied seismology for rock mechanics in mines. Quantitative seismology in mines. Workforce, staff and rock mechanics training on seismicity and rockbursting in mines. *In situ* dynamic ground support trials. Regional seismic monitoring.

*Mining Engineering:* Sequencing and mine design in high stress/rockbursting conditions. Stope design and open-stope stability. Pillar design and assessment. Rock mechanics infrastructure (shaft, orepasses, crusher,) design. Shaft sinking. Shaft assessment. Experience with a wide range of mining methods, from small-scale cut-and-fill to large-scale open stoping and bulk mining. Stope and pillar mining. Pillarless mining.

*Geotechnical Engineering:* Rock mass classification. Numerical modeling. Ground support for squeezing and rockbursting conditions. Design, installation and interpretation of rock-mass monitoring instrumentation (GMM, extensometers, stress cells, borehole camera). Ground support design, quality control, audits. Mentoring junior rock mechanics/ground control engineers.