Jim Hazzard

ITASCA Consulting Group, Inc.
An Itasca International Company

Principal Engineer

Expertise
Rock Mechanics, Seismology, Geomechanical Numerical Modeling, Software Development, C++ Programming

Education
Ph.D. (Numerical Modeling of Acoustic Emissions and Dynamic Rock), 1998
Keele University, Keele, UK

B.Sc. (Geological Engineering and Geophysics), 1994
Queen's University, Ontario, Canada

Registration
Registered Professional Engineer in the province of Ontario

Professional Affiliations
Member: Professional Engineers Ontario (PEO)
American Rock Mechanics Association (ARMA)
International Society for Rock Mechanics (ISRM)
American Geophysical Union (AGU)

Chair: CGS Rock Mechanics Division, 2011-2014
Canadian Rock Mechanics Association, 2014-2015

Professional Experience

2014 – Present	*Itasca Consulting Group, Inc., Minneapolis, Minnesota* *Principal Engineer*
2010 – 2014	*Itasca Consulting Group, Inc., Minneapolis, Minnesota* *Senior Engineer*
2004 – 2010	*Rocscience, Inc., Toronto, Canada* *Geomechanics Software Developer*
2002 – 2004	*University of Toronto, Dept. of Civil Engineering and Mining, Toronto, Canada* *Research Associate*
1999 – 2002	*University of Liverpool, Liverpool, United Kingdom* *Research Associate*

Project Experience

Management: Current Software Manager for Itasca Consulting Group. Oversees development, promotion, and sales of all commercially available software products.

Software Development: Current Product Manager and primary developer of *3DEC* — a three-dimensional distinct-element program for geotechnical and mining engineering. Has experience with developing finite-element software with fluid-mechanical coupling and dynamic-solution capabilities.

Consulting: Stability analysis for open-pit gold mine. Stress analysis in underground gold mine. Investigation of the effect of fluid on slope stability — Large Open-Pit project. Time-dependent deformation of rock fill — Mass Mining Technology project.

Research: Research on techniques for modeling fluid flow and hydraulic fracturing in rock and the resulting microseismicity.