

### Principal Geomechanics Engineer

<b>Expertise</b>	Mining Engineering, Numerical Modeling, Cave Mining
<b>Education</b>	M.Sc. (Mining), 2012 B.Sc. (Mining Engineering), 2010 Universidad de Chile, Santiago, Chile
<b>Professional Affiliations</b>	Member: American Rock Mechanics Association (ARMA)
<b>Honors</b>	"Juan Bruggen" Best Graduate of Class 2010 Mining Engineering, University of Chile. Awarded by the Mining Engineering Institute of Chile (IIMCh)

### Professional Experience

	ITASCA Minneapolis
2023 – Present	Principal Geomechanics Engineer
2019 – 2023	Senior Geomechanics Engineer
2013 – 2019	Mining and Geomechanics Engineer
2012 – 2013	Advanced Mining Technology Center (AMTC), Universidad de Chile Research Assistant
2011	BCTec, Santiago, Chile Project Engineer

### Project Experience

*Underground Mining:* Over ten years of experience in the geomechanical analysis of underground mines (longwall, stoping, cut and fill and room and pillar methods) applying numerical modeling to sequencing, stability, ground support and mining-induced seismicity. Clients include Tronox and Nyrstar Mines (United States); Havieron (Australia); Red Lake, Raglan and Trevali (Canada).

*Cave Mining:* Over ten years of experience in sublevel, block and panel caving mines from concept to feasibility level. Specialized in undercut and extraction level design, draw scheduling, forecasting of caveability, fragmentation, recovery, infrastructure stability and surface subsidence. Caving consulting clients include New Afton, Kemess, Stornoway and Ekati (Canada); Kiruna (Sweden); Ghaghoo and Karowe (Botswana); Northparkes and Cadia Valley Operations (Australia); Henderson and Dome (United States); Narkuzgan (Kazakhstan); El Teniente, Chuquicamata and Escondida (Chile); PTFI, Tjueh Bukit and Hu'u (Java, Indonesia).

*Rock Mass Characterization:* Performed core logging and site tests to assess the rock mass characterization of various rock types. Clients include Henderson and MnDOT (United States).