Shafts have been sunk to provide access to mineral wealth since the time of the Egyptians, around 4000 BC. The Greeks and Romans adopted these shaft sinking methods which continue essentially unchanged today. The basic process is unchanged. We utilize skilled labor to break rock and then hoist it to the surface in a bucket. Modern hoists with steel rope have replaced animals and hemp rope. We have added pneumatic, electric, and hydraulic means to drill rock and explosives to increase our efficiency. In 6,000 years we have advanced the rate at which shafts are sunk from 2 meters per month to 4 meters per day with no change in the basic means and methods. When compared with any other industry, including tunnel excavation, the advances made in productivity for shaft sinking are almost non-existent. Our need to go deeper for minerals, and use underground space for more facilities, will drive disruptive innovations in shaft sinking.

Mr. Sturgis is a geological engineer with thirty-eight years of experience in designing and constructing underground mining and civil projects, including the development of twenty-seven shafts. Since 2008 he has been Vice President of Project Development for Hecla Mining Company. The Project Management Institute certifies him as a Project Management Professional in addition to being recognized as a Certified Professional Constructor by the American Institute of Constructors and a Registered Member of the Society for Mining, Metallurgy & Exploration. His experience includes engineering, construction, construction management, and project management for projects in the U.S., Asia, Africa, and Europe. He has been a part of design and construction teams for projects using both drill and blast and mechanical excavation methods. George Sturgis is a project controls subject matter expert with a BSc. in Geological Engineering from the Colorado School of Mines and MBA from the Whitman School at Syracuse University.

Monday, February 6
4:00-5:00 p.m.
Brown Building W280

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