MEM activities at Homestake Mine

The Mining Engineering and Management (MEM) department at the South Dakota School of Mines and Technology (SDSM&T) views this is an excellent opportunity for the overall benefit of the department, the school and the mining industry in general. Having access to this mining complex, which at one time was one of the leading mining entities in North America, proves to be an invaluable asset to the institution. The existing strategic direction of the department (MEM) in research and academic growth coupled with a strong industry interaction, this access to the mine paves way to an exciting area that brings in new focus and excellent benefits to all the stake holders concerned.

Our focus areas would be mainly Teaching (Educational), Research, Commercial (Industry) and Training (Safety).

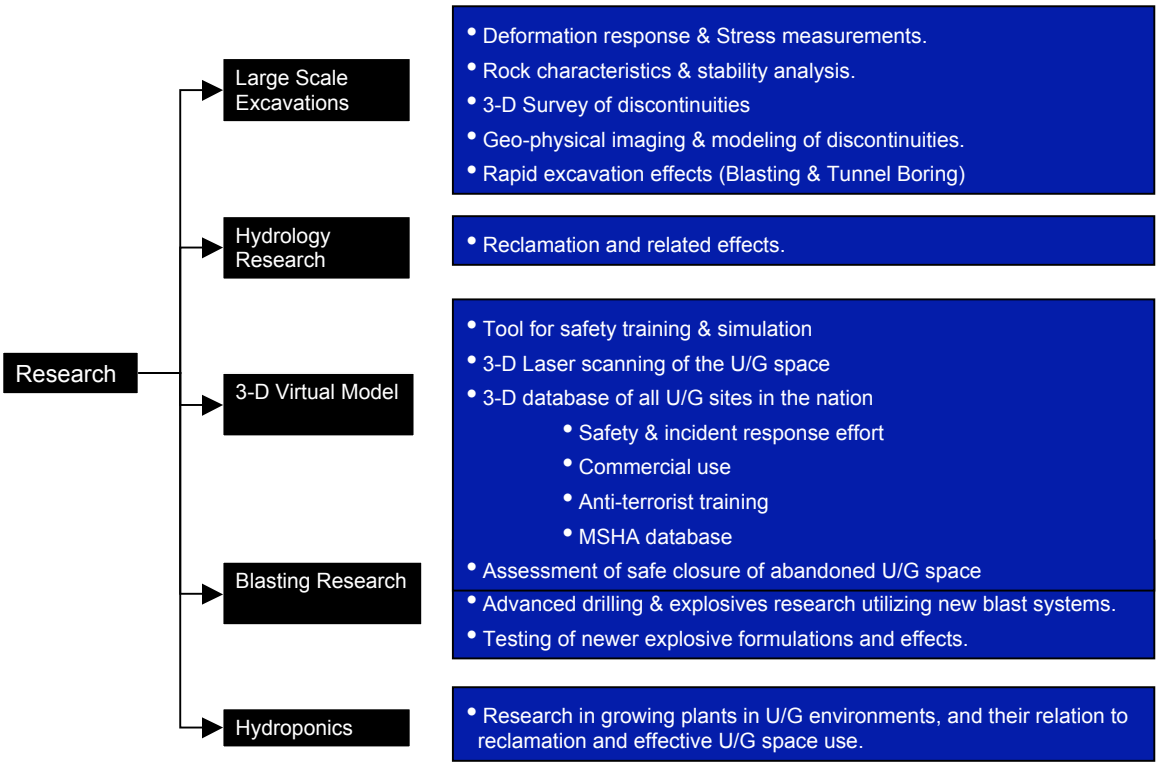
The School of Mines has a rich history of working with the mine during its peak operating days, and still maintains a good gamut of industry connections with several ex-employees, consultants and other entities.

In preliminary dialogue with a few industry partners, there has been clear indication that the industry could benefit greatly in conducting several commercial initiatives with our co-ordination at the mine. The fact remains that it becomes economically infeasible for any one industrial entity to take on this entirely, therefore, under the co-ordination of the School, several industrial entities could greatly utilize the access to the mine for various purposes including but not limited to activities such as product testing, trials, field demonstrations etc.

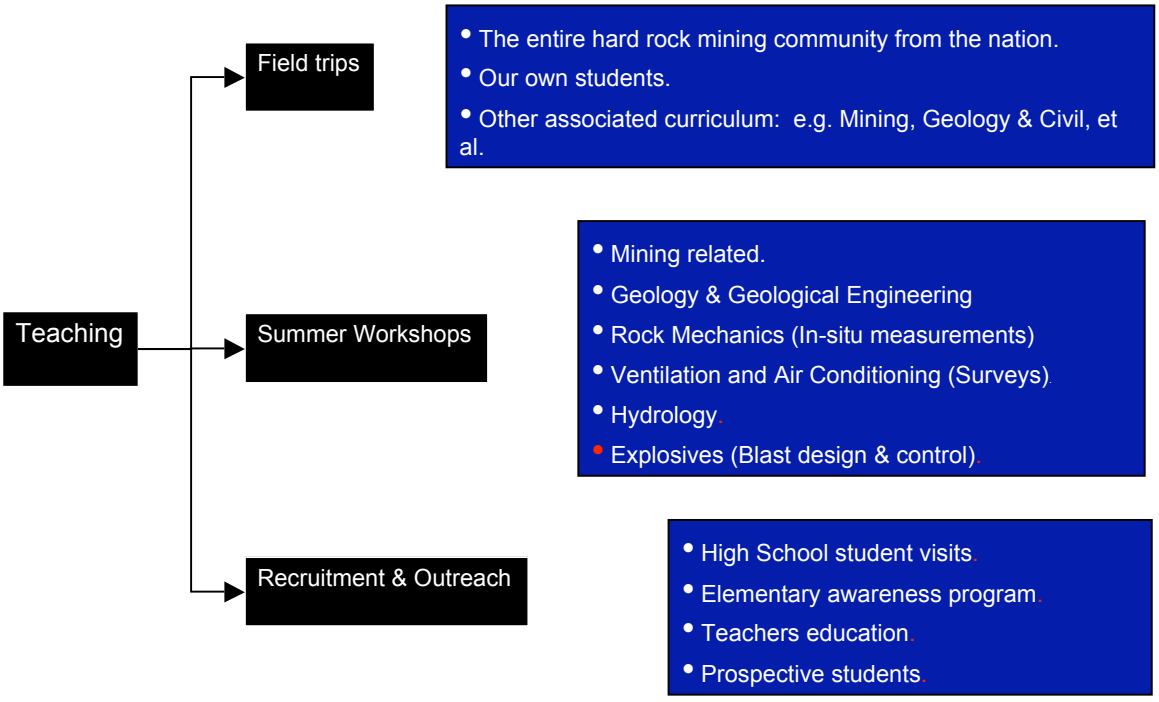
With an active MSHA state grant (Mine Safety and Health Administration, A federal agency under the Department of Labor) in place at the School, this mine could be an excellent avenue to be used as an on-site training ground for underground safety training applications. In fact, with the nature of the mine and the facilities that are present, they

provide an excellent location to be considered for a MSHA Underground Safety Academy for the western USA.

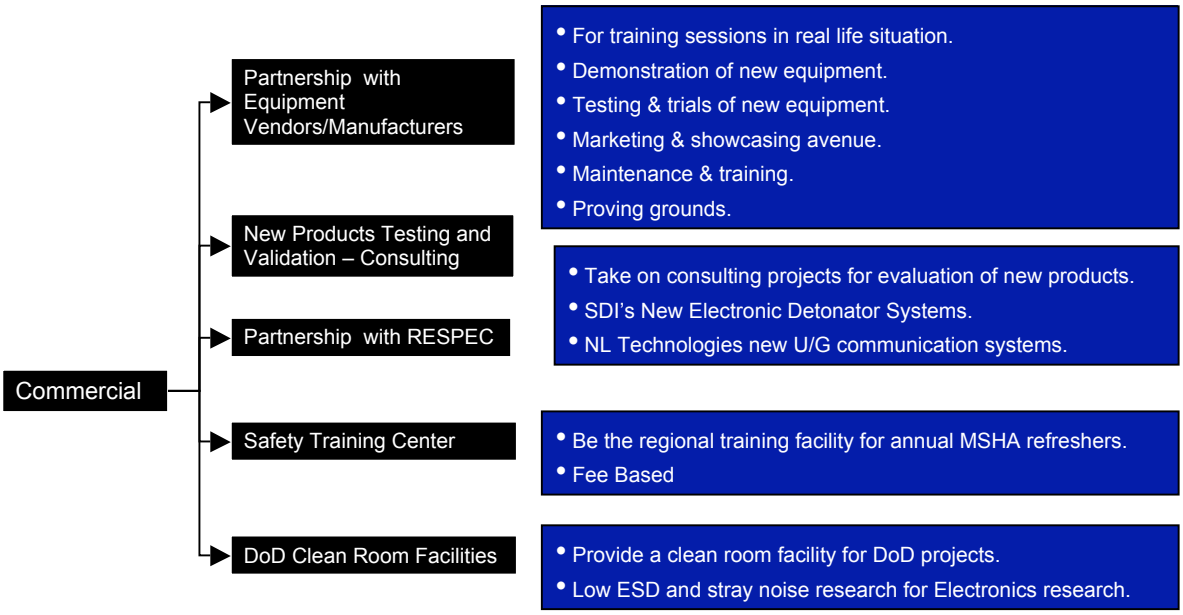
The figure below describes specifically the different areas of Research initiatives that could be considered.



The following describes the areas of focus in Teaching initiatives.



Listed below are commercial initiatives that can be envisaged.



Infrastructure:

This section refers to all the three items listed above, namely, Research, Teaching/Training and Commercial activities.

The main underground infrastructure needs are as follows:

1. All safe & legal access to the 4850 (& possible other) levels
2. Requisite ventilation per MSHA guidelines for safe working at these levels
3. Requisite amounts of safety gear (to be provided by researchers as well)
4. Adequate safe lighting requirements per MSHA guidelines
5. Compressed air for running pneumatic drills
6. Safe storage in terms of a remote magazine for explosives and initiation systems (In accordance with the MSHA and ATF guidelines, for the magazines)
7. Requisite communication facilities for safe operation.

The main surface infrastructure needs are as follows:

1. Staging area for conducting safe operations – office space
2. Lockers and showers for workers going in & out of the mine
3. Lock-out/Tag out system to keep track of workers underground & surface
4. Head lamp charging station and required maintenance station
5. Safety gear storage & deployment area
6. Small shop for regular ongoing mechanical maintenance with sufficient electricity & compressed air facilities.

Conclusion:

The School of Mines and the MEM department are well poised to take on this activity and with the active industry interaction and plenty of opportunities for research as described above, this endeavor has all the right elements for a successful creation of a educational and research center at the mine location.

The MEM department and the School of Mines have the necessary staff, graduate and undergraduate students for support and has the requisite academic qualifications to conduct the above mentioned activities in a professional manner that benefits all the parties involved.

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