



Potential scholarship ideas – BBUGS Scholarship 2024

1. The 'real' back pressure on resin during installation and if it can open beds (is the back pressure from bolt installation is enough to damage the roof and what parameters reduce back pressure?).
2. The effect of gloving on load transfer of roof bolts.
3. The relationship between cut through alignment and weightings or roof falls on longwalls by correlating back analysis of shield leg pressure data and longwall roof fall locations to determine if there is an increased likelihood of weighting or roof fall when aligned with cut throughs. Longwall Visual Analysis data from sites.
4. Creation of a database for pull test results for roof and cable bolts, different roof types, bolt and cable types, resin types, etc.. Potential data from sites and suppliers.
5. Pull testing of very high strength cable bolts (different plates and tendons) using one of the standard methods (UNSW/UoW) including determination of the degree to which strata shearing effects the performance of cable bolts.
6. Downgrading laboratory rock strength data to rock mass strength (of one rock type e.g. siltstone).
7. Analysis of subsidence data from LiDar data for estimation of ground strains, S_{max} and angle of draw and ranges thereof, sensitivity to geology, extraction ht and compared to GPS and peg survey data. Demonstrate the difference between startline and endline subsidence, the range of angles of draw and S_{max} and develop maximum and most likely S_{max} and angle of draw.

8. What is the real effect of point anchoring our roof bolts? Hard rock mines have shown that point anchored bolts have a tendency to become high speed projectiles when sufficient load is applied to them. Are different kinds of bolts or cables are more susceptible to violent energy release failure?
9. Effect of extraction height on maximum subsidence (Data from Broadmeadow and other mines)
10. The search for long distance stress effects from real time roof monitoring data.