

# Los Alamos National Laboratory Capstone Proposal:

## **Deceleration Material Test Rig**

*Montana State University*



### Scope:

A tricky problem to tackle is the management of mass in high shock environments. Different methods are employed to mitigate the loading introduced from both *explosive* and *impact* type testing. Your mission is to design and test an apparatus to evaluate the ability of different materials to decelerate a mass experiencing these harsh environments. As well as develop a methodology to support strict comparisons of material performance.

### Design Constraints:

- Simulate the deceleration of a 5 lb mass with initial velocity of 300 fps.
  - o Room for optimization available.
- Purely mechanical design.
- Test setup should be as light and simple as possible.
- Apparatus must be operable by two people or less.
- Repeatable input between tests.

### Budget:

- This project has a budget of \$2,000. There will be opportunities to use LANL resources.

### Point of Contact:

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