

**South Dakota School of Mines and Technology**  
**Department of Materials and Metallurgical Engineering**

**Project descriptions**

- 1) Make a horizontal cantilevered beam 12 inches long that will deflect 2 inches under a 5 lb<sub>f</sub> load and return to its original straightness.
- 2) Refine a Sn-Zn alloy into pure Zn and preferably pure Sn.
- 3) Refine and alloy 2 Toz of Black Hills panned gold into a white gold and yellow gold alloy so a jeweler can cast wedding bands.
- 4) Build a simulated composite furnace wall that minimizes the total of operating and capital cost.