

# Twenty Fifth Annual Bridge Building Contest

Friday, April 28, 2017, at 4:00 p.m.????

Newton 202

Refreshments will be served

Open to SUNY Geneseo Physics Alumni

Each team must include at least one SUNY Geneseo physics alumni. However, each team can have multiple other partners, including spouses, children, co-workers, etc.

Dr. Pogo, referee (pogo@geneseo.edu)

## Rules and other fine print:

1. Bridges shall be built using wood and Elmer's glue-all. Contestants must provide their own materials as listed below. The honor system is in effect. The mass of each bridge may not exceed 265g.

Various types of wood are permitted:

20 balsa sticks:  $\frac{1}{8}$ " square, 36" long  
15 balsa sticks:  $\frac{3}{16}$ " square, 36" long  
20 birch sticks,  $\frac{3}{8}$ "  $\times$   $\frac{1}{16}$ ", 4.5" long

8 balsa sticks:  $\frac{1}{4}$ " square, 36" long  
1 balsa sheet: 2"  $\times$   $\frac{3}{32}$ "  $\times$  18" long

2. The bridge will be required to span a gap that is 120 cm across. The bridge length may not exceed 132 cm. The 10.2 cm high aluminum walls are horizontally adjustable and may be in contact with the bridge. The 3.8 cm aluminum walls are not adjustable, but may also be in contact with the bridge.
3. The width of the roadbed must be between 9 and 15 cm, and must accommodate the testing device (including a hole of sufficient size for the steel ring) discussed below. It is the responsibility of each contestant to ensure that this device can be quickly placed onto the bridge.
4. Bridges must demonstrate stability before the testing device is attached. The bottom of the testing device may be no higher than 2 cm above the support surface indicated.
5. Bridges shall be tested by pulling downwards on the padded testing device until each bridge is destroyed. The device will be placed on the bridge roadbed with the steel ring facing down, so that it extends *through* the roadbed. Tension will be applied to the cable by a motor in gradually increasing amounts until the bridge collapses. At no time during testing may the bridge contact any part of the testing device other than the padding itself.
6. Bridges will be ranked both by the weight supported and by the ratio of (supported weight to bridge weight). I have not yet decided how to balance these for an overall winner.
7. Rules are subject to interpretation by Dr. Pogo.

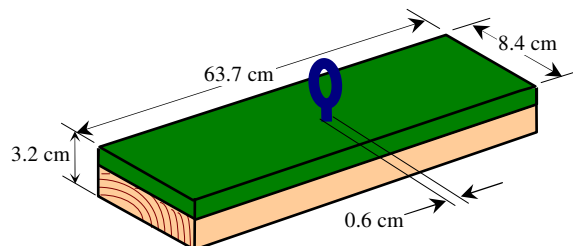
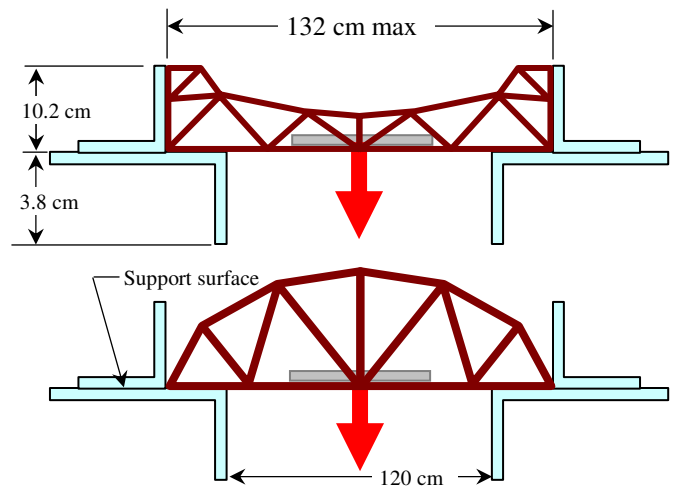


Fig. 2. Testing device. The steel ring has a 2.5 cm diameter.