**MUSE Basis of Estimate**

**Element WBS #4**

I. General Information

Task Name: Labor for straw construction

Unique ID Number

Date of Estimate: March 19, 2014 (last update)

Estimate Generator: G. Ron, R. Ransome, N. Sparveris

Cost Category:

 M&S

 X SWF

Comments:

Vendor Quote Number if Applicable\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Drawing Reference Number or Attachment:

Costing Method: Cost based on PANDA experience and known grad student costs

Total Task Cost: $175,468

Total Contingency: $35,094

II. Cost Estimate Breakdown

Cost of each element, along with justification

The PANDA experience is that up to 50 straws/day can be manufactured by two people. We use a more conservative estimate of 10-15 straws/day, including testing, because of the smaller number of total straws (3000 vs 10000 at PANDA), done primarily by graduate students, who will have other duties. Labor will consist of a half-time technician, paid by Hebrew Univ., and two grad students, one from HU and one from Temple. The HU student stipend is $30,000/year, plus 25% F&A, for a total of $75,000.

The stipend for the Temple student is taken as $2026/month (9 month) for year 1, and $2066/month (12 month) for year 2. Fringe benefits are 20.5% and F&A 26%. Tuition is assumed at $1130 (1 credit) for year 1, and $2260 (2 credits) for year 2. We also include travel to Israel for the Temple student as part of the labor cost. This assumes 3 round trips at $1400/trip, $1500/month housing, and $50/day per diem. The total cost is $43,026 for stipend and tuition, $25,200 for travel, and F&A of $20,032.

The combined labor cost is then $140,436 plus $35,032 F&A, for a total of $175,468.

III. Contingency and risk analysis

With currency fluctuation of 10%, and a contingency of 10% on other costs, the contingency is $35,094.

