Budgeting Lesson

- Objective:
  - Introduce some simple concepts regarding developing budgets and cost projections
- Content Foundation
  - Experiences with writing budgets for grants within a University framework
  - Most non-academic organizations use a format somewhat similar to this

Project Cost Components

- **Direct Costs**
  - Specific to undertaking the project
  - Physical materials (supplies, equipment, etc.)
  - Labor expenditures (including benefits)
- **Indirect Costs (overhead costs)**
  - Not obviously due to the project
  - Facility costs, power costs (lights), storage space, computers, office furniture, etc.
  - Hard to estimate accurately, usually expressed as a percentage of the direct costs

Total Project Costs

Total Project Cost = Direct Costs + Indirect Costs

If Indirect Costs are expressed as a % of the direct costs:

$$\textbf{Indirect Costs} = \frac{\%\ \textbf{Overhead Rate}}{\mathbf{100}} \times \textbf{Direct Costs}$$

$$\text{Total Project Costs} = \left(1 + \frac{\%\text{OH Rate}}{100}\right) \times \text{Direct Costs}$$

CDR - Budgeting Deliverable

- You will evaluate two situations:
  i) Production of 'to be assembled' kits
  ii) Production of fully assembled model kits
- Both kits require the same parts and materials but different amounts of labor.
  i) Assembling the vehicle
  ii) Sorting parts into a kit
- The total anticipated cost for the assembly of 1,000 of each of these kits is to be estimated

(Document the estimation **)**

Cost Estimation Data is On-line

Materials (Parts)Costs

- **Parts Base Costs**
  - budgeting lesson on web-site
- **Discount Rates**
  - (% discount for quantity purchases of individual parts):
  - (100 pcs - 5%) (500 pcs - 10%) (1,000 pcs - 15%) (5,000 pcs - 20%)
- **Shipping and Handling**
  - 5% of the total parts bill
- **Parts and Supplies are direct project costs**
  - **Add Indirect (Overhead) Costs: 125 % of direct costs**

Cost Estimation Data is On-line

Labor (Sorting and Assembly)Costs

- **Determining Labor Costs for Sorting and Assembly**:
  - Estimate the amount of labor (time) required to sort the parts into one kit (document how this number was obtained)
  - Estimate the amount of labor (time) required to assemble one kit (document how this number was obtained)
  - Determine: Pay-scale (minimum wage?) and wages paid to employees
  - Add additional costs to the employer
    - Federal taxes (Social Security and Medicare) – 7.65%
    - Workmen's compensation – 4.66%
    - Unemployment insurance - 0.1%
    - Long term disability insurance – 0.55%
    - Life insurance – 0.3%
    - Retirement contribution (401K) – 5%
- **Labor is a direct project cost**
  - **Add Indirect (Overhead) Costs: 125 % of direct costs**

CDR - Budgeting Deliverable

- ‘To be assembled’ Project Cost
  - Parts + Labor + Indirect Costs
    - Indirect Costs = 1.25*(Parts + Labor)
- ‘Fully assembled model’ Project Cost
  - Parts + Labor + Indirect Costs
    - Indirect Costs = 1.25*(Parts + Labor)

(Document the estimation **)**