

## Comments on preparing Experimental Data and Results Tables for Lab Reports

### **General:**

Tabulations of data and results are the core of a good analytical chemistry lab report. They should be designed to be complete self-contained summaries that can stand alone to give the reader an appreciation of what was measured and some estimate of the uncertainties in those measurements.

### **Data Tables:**

Data tables may be used to summarize lists of experimentally measured values and should include all relevant information required to repeat the observation, such as experimental conditions, operating parameters of instruments and estimates of individual reading errors. Since raw data is usually converted into results through some sort of calculation, other parameters needed in this calculation should be included.

### **Results Tables:**

Results tables are used to summarize calculated results based on information given in data tables and should include some measure of the experimental precision (standard deviation among replicates), confidence intervals and final reported values.

### **Data and Results Tables:**

For some experiments Data and Results can be combined into one table.

*Things to remember to include:*

1. Descriptive title
2. Appropriate headings (with units)
3. Individual measured values (with estimates of reading error)
4. Mean values (if replicates were performed)
5. Sample standard deviations (where applicable)
6. 95% Confidence intervals (where applicable)
7. Final reported values (quoted to an appropriate number of significant figures and an estimate of the uncertainty)

*Data tables should also include footnotes that specify:*

1. all information pertinent to experimental measurements, such as instrumental specifics, operating parameters, calibrations etc.
2. all pertinent information required to convert raw data into a calculated result, such as sample volumes, titrant concentrations etc.