<u>Basic</u> Instructions for the Use of the CARY 50 UV-Vis Spectrophotometer

<u>Instrument Setup and Data Collection:</u>
1. On the computer desktop, open the folder "Cary WinUV".
2. In the Cary WinUV folder, open the program icon "Scan" – this opens the program needed to run the instrument.
3. Once the program opens, click the "Setup" button on the upper left of the screen. In the setup window:
   a. In the "Cary" tab:
      - Select a wavelength range for a scan by entering wavelengths under "X-mode"
      - To make absorbance measurements, select absorbance under "Y-mode"
      - Select "dual-beam".
      - Choose a scan speed. "Survey" is used to get a general sense of where a sample absorbs strongly.
   b. In the "Baseline" tab:
      - Choose "baseline correction".
   c. In the "Reports" tab:
      - Under "Options", make sure that only the "Graph" button is selected.
      - You may choose to label peaks on this screen. It can also be added later.
   Exit the setup window.
4. Click the "Baseline" button to collect a baseline spectrum.
   a. Place a blank in the sample holder. Click "OK" to start the scan.
5. Remove the blank and place your sample in the sample holder. Scan the sample by clicking the "Start" button at the top of the screen.
   a. You will be prompted to save the file to disk. You may place the file in the "Chem 322" folder on the desktop. Press OK to save the file.
   b. Give the sample a unique identifying name.
6. Your spectrum will be displayed on the screen. It is automatically saved. Each sample you scan in this session will be saved under the same file name but will have a different identifying name.

<u>Measuring Absorbance at a Given Wavelength</u>
   There are several ways to display the absorbance of a sample at a given wavelength.
1. From a spectrum
   a. Choose "Cursor Mode" from the "Graph" menu.
   b. Choose "Track" on the cursor mode screen. Select OK.
   c. Move your mouse to move the target on the spectrum. The wavelength and absorbance of a given point will be displayed on the lower right.
2. From labeled peaks
   a. Choose "Peak Labels" from the "Graph" menu.
   b. Choose "XY labels". Select OK.
   c. Peak labels should be displayed. You may need to change the definition of a peak in the Peak Labels window to make the system more or less sensitive. You also may need to change the scale of the graph in order to see the entire peak label on the screen.
3. From a scan at a single wavelength
   a. Insert the sample to be scanned in the sample holder.
   b. Under the "View" menu, choose "View Report".
   c. Choose "Rapid Results" under the "Scan" menu or press F6.

d. Enter the chosen wavelength. The instrument will scan the sample at that wavelength. The absorbance will be displayed in the upper left corner of the screen and will be printed in a column on the report.

Overlaying Spectra on the Screen
1. When more than one spectrum has been collected, choose "Trace Preferences" under the "Graph" menu.
2. Each scan that has been collected will be listed. Place a check mark by the scans that you wish to see overlaid on the screen. These will also be the spectra that will be printed.

Printing (all currently displayed spectra will be printed)
1. Be sure that the printer is on and on-line.
2. Make sure that the spectra are displayed on screen as you want to see them in the printout. You may need to adjust the scale or add or remove overlaid spectra.
3. From the "File" menu, select "Print".
4. Click the "OK" button.