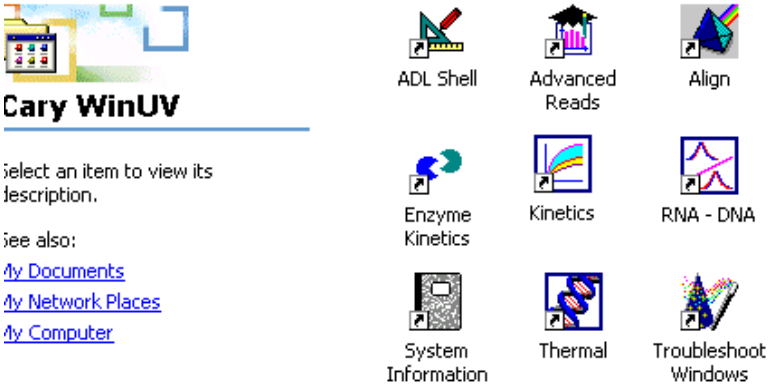
# Appendix #2[1]

## Guidelines for kinetic runs on the Cary 100 Scan UV-Visible Spectrophotometer.

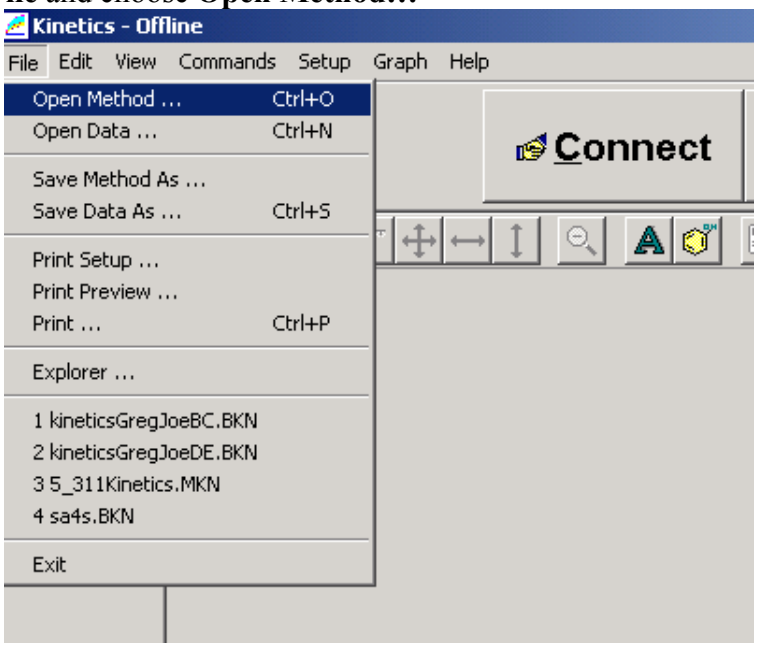
**Mircea D. Gheorghiu**

1. On the Dell Optiplex GX 150 Monitor, if **CaryWinUV** is not launched, click on the icon:


then click on **Kinetics** icon.

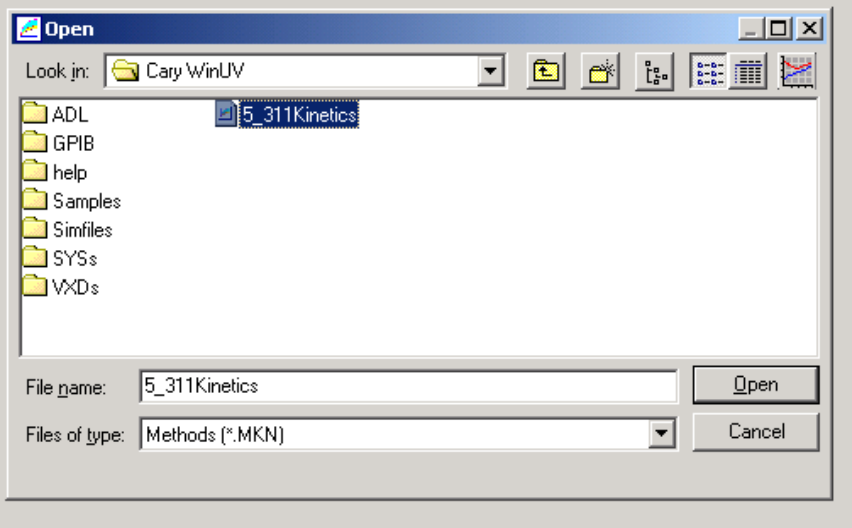



Then click on **File** and choose **Open Method…**

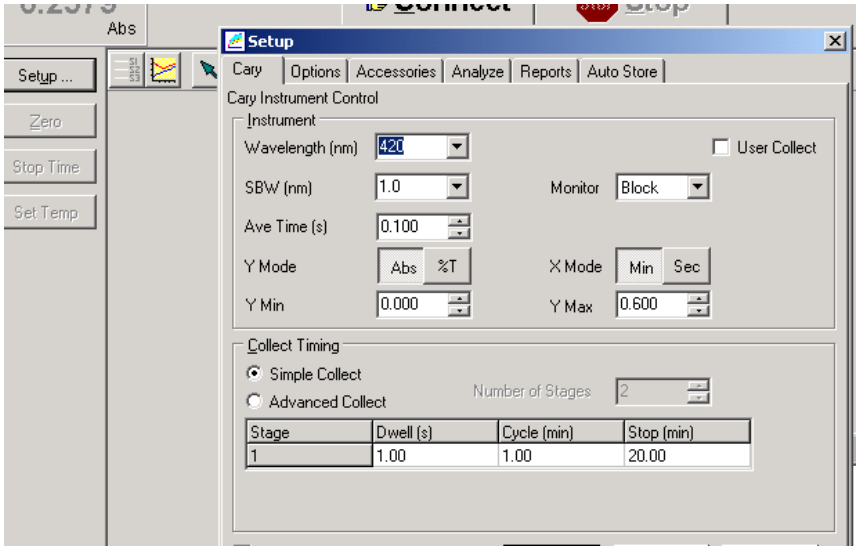



[1] If you have any questions please contact Dr. Mircea Gheorghiu (mircea@mit.edu).

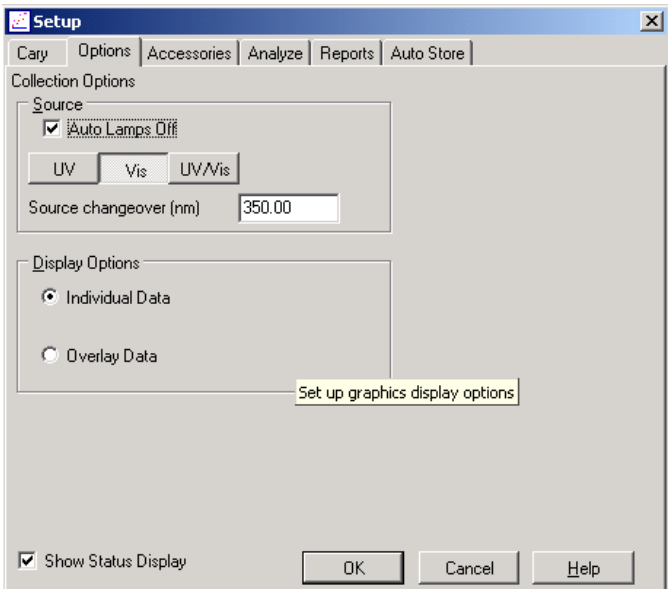
Select and open **5_311Kinetics** method:




In the **Cary Instrument Control** windows, type 420 nm for the wavelength at which the instruments collects absorbance data related to the concentration of $K_3[Fe(CN)_6]$. **Ymode** must be **Abs** (Absorbance), **Xmode** must be in **Min** (minutes). Make **Ymin**=0.000 and **Ymax**=0.600. In the **Collect Timing** window, choose **Cycle** = 1.00 minute, and **Stop** time 20.00 minutes.

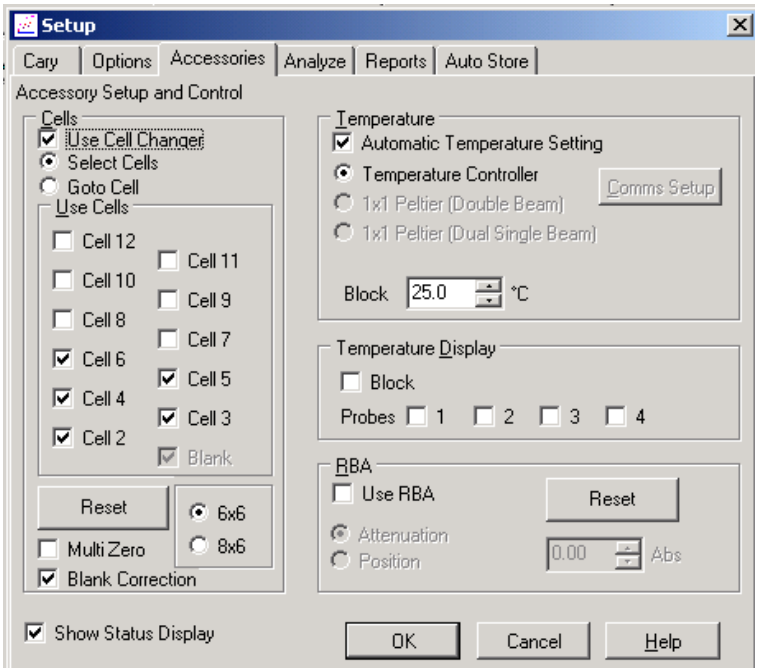



Go to **Options** tab.




Check in **Auto Lamps Off** box and choose the **Vis** button. As **Display Options** click in the radio button **Individual Data**.

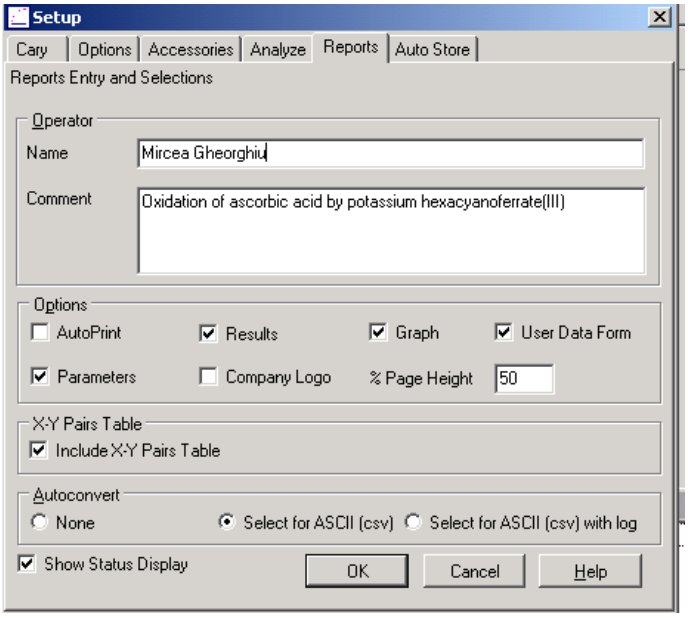
Move to **Accessories** tab. Check the **Use Cell Changer** and the radio button **Select Cells**. Because you will run kinetics in four Ionic Strength environments (0.02 M; 0.05M, 0.1M and 0.2M, respectively) you have to check **Cell2** through **Cell5**. Also, I would like to suggest (is not in the 5.310 Lab Manual) to run a sample without $NaNO_3$ (What information will provide this particular sample?), and thus to click on **Cell6**. Check the **Blank Correction**, and the radio button **6x6**.



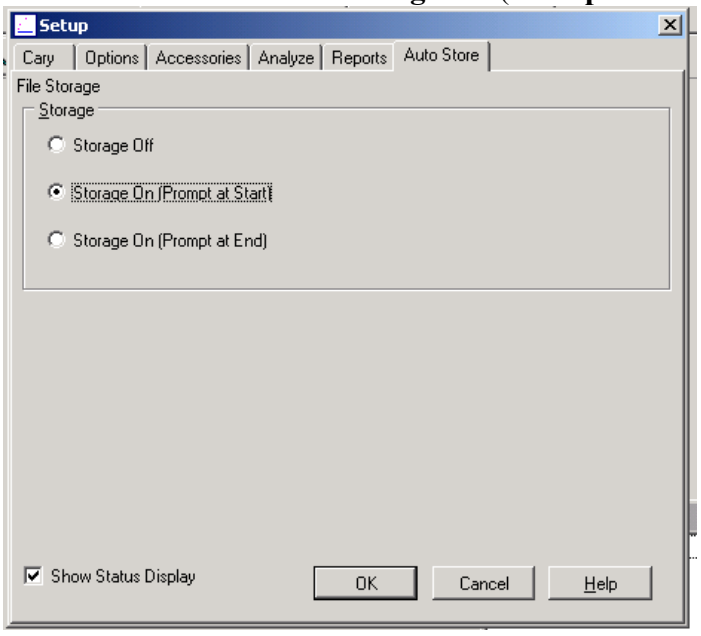
Click on **Automatic Temperature Setting** check box and on the radio button **Temperature Controlle**r. Set the temperature according to what your TA will suggest (for example any of the following temperatures 15, 20, 25, 30, 35 ºC).

***Note: kinetics data collection will not start until the cell holder reaches the set temperature.***

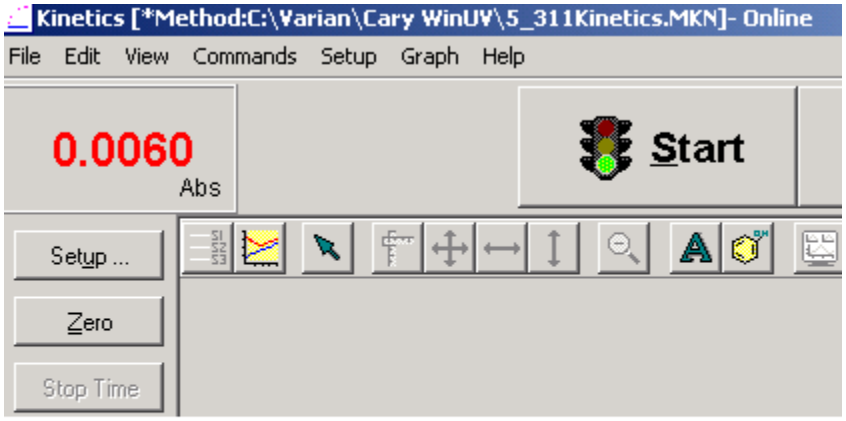
Go to **Reports** tab. Type your **Name** and the appropriate **Comment**. Check the **Include X-Y Pairs Table,** also **Select for ASCII (csv**) radio button.



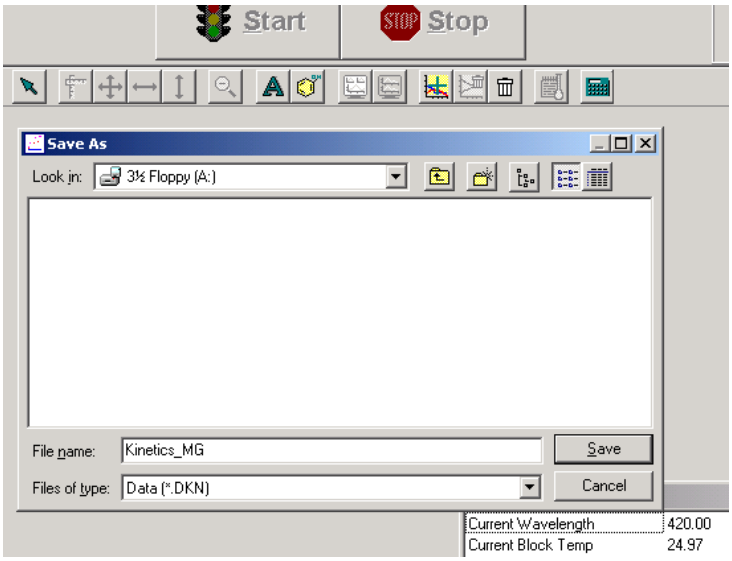

Click on the **Auto Store** button and choose **Storage On** (**Prompt at start**).



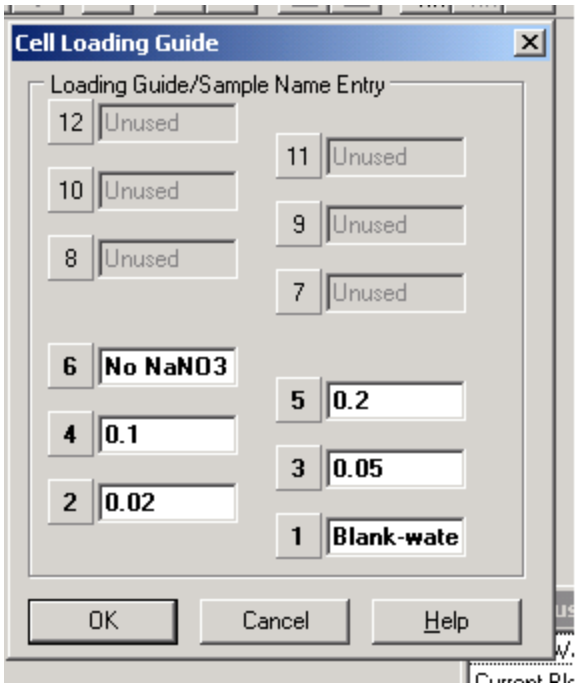
When click on the **Start** button,



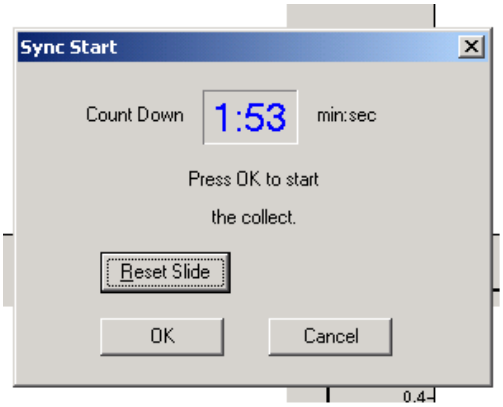

the **Save As** window pops-up:



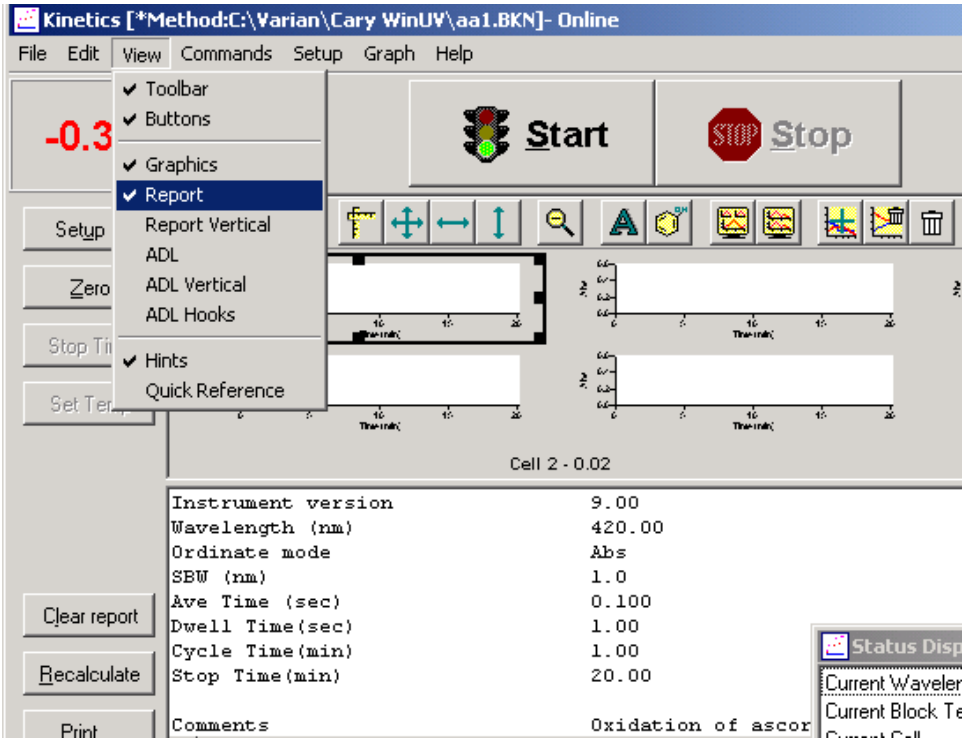

Give a name to your file (on 31/2 floppy), and click **OK**. The **Cell Loading Guide** comes on the screen. Give a name to the blank (for example water) and to cells 2 throught 6 (for example 0.02; 0.05; 0.1; 0.2 and No $NaNO_3$).




Click **OK**. Automatically the **SyncStar**t window comes on the screen. Click **OK**.




On the screen will appear the five kinetics windows. To view the kinetics report, click on **View** then on **Report**.




When the runs are completed, save the data as Excel files.

Go to Appendix #3.