Work Completed

This week, work was done on several aspects of the project. Kevin continued to work on the mechanical components. He built what we hope is the last version of the cutter platform. An oval centering mechanism was chosen to replace the circular design due to the oval's ability to more forcefully apply the required center vectors. This new design allows for better motor mounting and pill removal. This unit could be constructed with the use of plastics however for prototyping purposes the unit is again made of wood. Important modifications to the wood were the coating of friction surfaced with laminate. This allows the pills and slides to move with limited resistance.

Kevin also did some work on designing the gear box and shaft mechanism that will allow the cutter platform parts to move. He worked on the vacuum pump air reservoirs as well.

Eva spent much time on overcoming our devices compatibility issues. The solution to this issue is using the Viewsonic Airpanel 100 Super PDA. This device consists on a 10.4” touchscreen, CompactFlash and PCMCIA expansion slots. This device is also capable of supporting USB devices, therefore the USB barcode scanner and keyboard can be plugged into the device. The data acquisition box driver for the USB DAQ we currently have cannot be downloaded onto the airpanel since it uses the same operating system as the PDA’s (Windows CE.NET); therefore a new DAQ was purchased that utilizes the PCMCIA slot.

Jackie organized the functions of our device into a LabVIEW style flow chart. This way, we not only had an idea of what the functions were, but how they were going to be accomplished using LabVIEW. The chart showed how the main program would utilize sub-VIs. After coming up with a rough draft, Eva and
Jackie went over the process together and ended up simplifying the amount of possible situations we will initially program so that we can add code if we have enough time. The sub-VIs included a pill compartment motor control VI, a store info VI, a dispense VI, a user input sequence VI, and a cut pills VI.

**Future Work**

Work will continue on the program which is divided between Jackie and I. Jackie will focus on the control of the motors while I focus on the flow of inputs and output to the user. With the major flow diagram developed Friday, each of our portions can be created as VI’s since we know the inputs and outputs that needed for each VI. To help us with the programming both Jackie and I will be attending a LabVIEW seminar in Windsor this Thursday.

Kevin will continue to work on the mechanical portions of the project, specifically the vacuum pump and coupling the movement of the cutter with the robotic arm.

**Project Review**

The programming of the device has been set back due to the issues of the hardware. Now that we have the Viewsonic Airpanel on order, focus again can be shifted to the programming portion of the project. The seminar should also help provide suggestions oh how to set up the various loops and commands in the program to reduce the amount of errors and make the program as automated as possible.

**Hours Worked**

Jackie: 7 hours  
Kevin: 8 hours  
Eva Marie: 9 hours