This past 23 January 2009, I missed our teams allotted lab time due to athletic traveling. Kristin reported to me shortly after what she and Damien worked on in the Engineering II material science laboratory. The two worked on creating the mold with the kit purchased to prepare a Kevlar mold. An original World War II helmet was used as the base for this mold. A wax compound included in the kit was then spread over the helmet. The wax was used to prevent the following layers of Kevlar and epoxy from sticking to the helmet. However, after inspection of the first few layers of Kevlar added to the mold, it appears that both the mold of wax compound and the Kevlar have stuck firmly to the helmet.

The adhering of the Kevlar to the helmet is now a problem because the helmet is simply being borrowed from a friend and was supposed to be returned after a few weeks. The epoxy, Kevlar sheets, and mold which was supposed to be merely a wax, have all seem to permanently adhered to and dried onto the helmet. I am now in the process of researching products that may be able to loosen these materials to remove them. In addition, cutting and sanding of the materials may be necessary to restore the helmet to normal.
Due to the possible ruining of the helmet, we may have to seek another way to create this mold. Perhaps another method is possible that involves making a negative of the WWII helmet without running it. This could then allow us to use the negative to our disposal to make the proper Kevlar helmet using the kit. In addition, the Kevlar layers that were molded to the helmet appeared to be somewhat lumpy and not that smooth. The edges certainly did not finish well. This indicates that more practice is needed when forming the Kevlar. There is enough Kevlar fabric and should be enough epoxy to be able to gain some more experience in using this composite before the final product is begun. Another issue brought up is that the two Kevlar sheets used on the WWII helmet mold seem to be very thick. While Kevlar functions its best in multiple layers, as we had planned to build the helmet in, it appears that many additional layers will make the helmet much too bulky and thick, something that should be avoided at all costs. Some revision and planning is needed to resolve these problems.

Additionally, it appears that we will need some extra supplies to help with the molding process of the helmet. For example, we will need appropriate disposable gloves, perhaps some cleaning supplies for the lab, as the epoxy, mold substance, and Kevlar become a very messy system, and a safety knife, other cutting tools, and sanding/finishing tools. The process seems to be very difficult to make the end product look well finished and the proper shape. The additional cutting and finishing tools should aid in this process.
Finally, we have proposed meeting at a different time than the current Friday 1-5pm slot due scheduling conflicts mainly with me and basketball practice/traveling. I will attempt to miss some of practice to put some hours in to the current time slot, but we plan to meet additionally at different times when we can all be together. Working with only certain teammates available does not have the most productive results. It is much better to work when we have all members available for input and participation.