Over the course of this week I practiced extracting the teeth of three different mice, all of which were dead. The purpose of this was to acquire the necessary skills to perform the same procedure on live mice without causing injury or death. The process itself was quite difficult. The teeth are extremely small. Since the last time I practiced this in our lab, our team has purchased new tools. The two new instruments, a dental pick and Adson rat tooth tissue forceps, can be seen in Figures 1 – 5. These proved to be extremely helpful. Whereas the first time I attempted to remove the teeth I was completely unsuccessful, this time it was significantly easier. This was due in part to the new tools, as well as to the new technique I learned at the Health Center in January. I was able to remove a few teeth that remained intact. However, on many of the teeth, the crown of the tooth snapped off at the gum line. When this happens, at least part of the root remains inside of the respective maxilla or mandible. The presence of the root provides mechanical stimulation to the bone and prevents its degradation. Without this degradation, our experiments will be invalid. A crucial element of the experiment is to monitor the amount of bone degradation. Therefore, the roots must be completely removed.

In order to fix this problem, more practice is necessary. Another concern I have is that the mice will be injured during the surgery to remove their teeth. It is evident from the pictures that the mouse’s airway can become compromised during the tooth extraction procedure. If this happens, the mouse will suffer a lack of oxygen, potentially leading to brain damage or death. Other possible surgical risks are potentially fatal damage to the neck or spinal cord and injury to the mouth. There is a significant amount of force being applied while removing the teeth. The neck is poorly supported, leaving it vulnerable to damage. It is also easy to slip while trying to loosen the periodontal ligament from around
the tooth. This happened with one of the mice I extracted teeth from. If this happens to a live mouse, it would certainly cause severe injury or death.

To avoid injuring the mice, I will perform more practice extractions on mice this week. The forceps we have work well for the front teeth, but are too large to even grip the back molars. This makes it nearly impossible to remove these teeth. Therefore, we have ordered two smaller (8 mm) pairs of Adson rat tooth tissue forceps (Figure 5). This week I will also visit the animal facility in the Pharmacy Building here on the University of Connecticut Storrs campus and hopefully practice there. I am also looking into finding a better light source for the work area I currently have in the lab so that it is easier to see inside of the mouths of the mice. Before I order one, I am going to check the Central Stores Warehouse.

**Time Spent this Week:** 6 Hours

**Money Spent this Week:** $70.00 – 2 pairs of Adson forceps

Figure 1. Mouse with extracted teeth.
Figure 2. Mouse with mouth propped open.

Figure 3. Mouse with necessary tools for extraction procedure.
Figure 4. Mouse undergoing extraction procedure.

Figure 5. Adson rat tooth tissue forceps.