

# REPORT TO MONTANA STATE UNIVERSITY TEACHING/LEARNING COMMITTEE

## INSTRUCTIONAL INNOVATION GRANTS, 2000-2001

**Project Title:** Beekeeping in the ENTO 204 Laboratory:  
Establishing Demonstration Colonies

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Student laboratories in introductory entomology courses have traditionally been centered around teaching students to identify different kinds of insects. Clearly, insect identification is central to entomology because of the great diversity of insects in natural and agricultural ecosystems. However, devoting an entire semester to having students look at dead specimens, some of which have been impaled on pins since before the students were born, leaves them with little appreciation for living insects (and an impression that the daily business of entomology is quite tedious). I have tried to bring life to insect identification by having students make their own collections, but the vagaries of autumn weather in Montana have often been a odds with this goal. Dry conditions during the summer and fall of 2000, in particular, were not conducive to having the students assemble a good collection.

To remedy this during Fall 2001, I changed the first lab of the semester from an examination of dead, pickled grasshoppers to a visit to a working apiary. The apiary consisted of two beehives established in May on the MSU Horticultural Farm on west College Street, using funding from the TLC Committee. During the first week of Fall classes, ENTO 204 students met at the apiary and listened to a brief lecture on how the apiary was started, how it was maintained during the summer, and how it will be prepared for winter. They then donned their protective suits and we opened the hives to allow them a look into the workings of active colonies and bees coming and going on their foraging trips. Some students clearly exhibited apprehension when the hives we opened, but many were willing to get close and get their hands on the hives, bees, and honey. Several weeks into the course we also had a hands-on demonstration in the lab, showing how honey is extracted from the honey comb. Each student in the class

was later given a jar of honey. Besides starting the course with something more inspiring than a dead grasshopper, the apiary visit integrates well with the lecture portion of the course, where we examine the critical role that honey bees have played in research on pollination, vision, communication, and social behavior.

A questionnaire give to students revealed a near unanimous opinion that the apiary demonstration was a good way to initiate them into the Insect Biology course and that this part of the course should be expanded in future years (and perhaps expanded into a separate mini-course devoted to beekeeping). Next year we plan to establish one more outdoor hive and, hopefully, build an in-lab observation hive that can be monitored weekly by students. This year, we found that we will have to build more flexibility into our 2002 lab schedule to account for crummy weather (during the first week, not all lab sections we able to visit the bee hives).

### **Honey bees questionnaire for ENTO 204 (N = 25 respondents)**

Did you get a chance to visit the beehives on the first week of classes?

Yes \_\_\_72%\_\_\_ No \_\_\_28%\_\_\_ (due to poor weather)

If you visited the beehives, did you find this to be a interesting way to start your semester in ENTO 204 labs (as compared to going to the lab classroom and beginning to dissect grasshoppers, which is what we usually do on the first day)?

Yes \_\_\_100%\_\_\_ No \_\_\_0%\_\_\_

Would you recommend that we use the visit to the bee hives as a lab in next year=s course?

Yes \_\_\_100%\_\_\_ No \_\_\_0%\_\_\_

Did you get a chance to observe the honey extraction procedure in lab? (This was optional)

Yes \_\_\_44%\_\_\_ No \_\_\_56%\_\_\_

If you got a chance to observe the honey extraction procedure, would you recommend that we repeat this part of the lab next year?

Yes \_\_\_91%\_\_\_ No \_\_\_9%\_\_\_

Would you suggest that we have an entire lab devoted to observing honey bee behavior in the field?

Yes \_\_\_96%\_\_

No \_\_\_4%\_\_\_