



# The University of Michigan Transgenic Animal Model Core

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## Blastocyst Microinjection Training Syllabus

### **Purpose:**

To provide all knowledge and experience necessary to perform injection of mouse blastocysts with embryonic stem cells for the production of ES cell-mouse chimeras.

### **Overview:**

Training is divided into two phases:

1. Discussion and laboratory in blastocyst collection and transfer to pseudopregnant mice.
2. Discussion and lab experience in microinjection of blastocyst and transfer to pseudopregnant mice.

### **Preparation:**

1. Trainees will read and be familiar with the following sections in *Manipulating the Mouse Embryo: A Laboratory Manual*. 3rd ed. 2003. Nagy, Gertsenstein, Vintersten and Behringer. Cold Spring Harbor Laboratory Press. pp. 141-193. pp. 201-208. pp. 251 – 257. pp. 268-271. pp. 453-480.
2. Instruction in the fabrication of glass instruments used in transgenic mouse production.
3. Practice in the use of mouth pipettor and transfer pipets used to move mouse eggs.

### **Sample Schedule:**

- Day 1 8:00- 5:00 glass microinstrument fabrication, collect blastocysts and transfer to recipients
- Day 2 8:00- 5:00 microinjection workstation orientation, collect, inject, and transfer blastocysts to recipients
- Day 3 8:00- 5:00 collect, inject, and transfer blastocysts to recipients
- Day 4 8:00- 5:00 collect, inject, and transfer blastocysts to recipients
- Day 5 8:00- 5:00 collect, inject, and transfer blastocysts to recipients

In order to derive the maximum benefit from this training, trainees should plan to spend a full day (8 hours) in the Transgenic Core on the scheduled days.

### **Follow-up:**

Recipients of blastocysts from the first day of class will be euthanized and their uterine contents scored for number of pregnancies and implantation. Recipients of injected blastocysts will be allowed to go to term and their progeny will be scored for agouti coat color contribution. This information will allow the trainee to assess her/his skill level in embryo transfer and blastocyst microinjection.