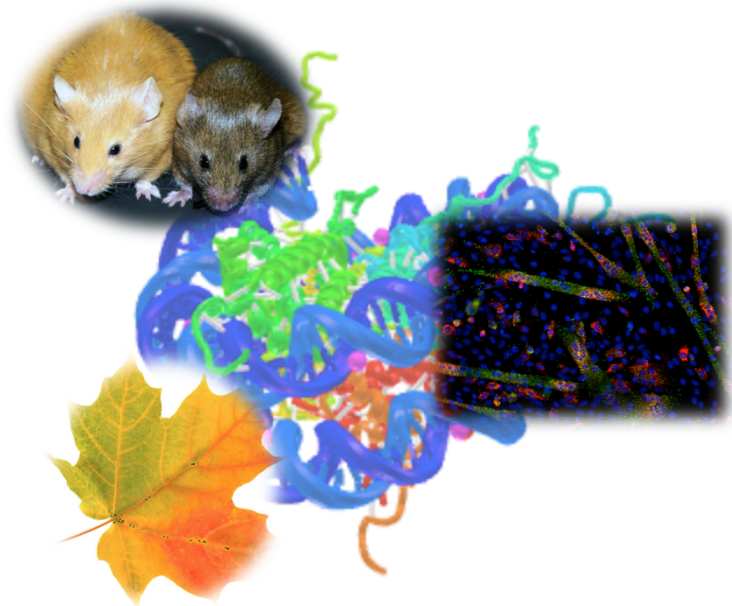


Overview:

- This course will integrate the use of standard assays with novel technologies to assess alterations in epigenetic markers during cell differentiation and stress responses.
- Emerging topics in epigenetic research will be discussed.
- Students will also gain experience working with mammalian tissue culture and a model plant system.



Selected Lecture Topics:

1. DNA methylation
2. Histone modifications and histone modifying enzymes
3. Polycomb and Trithorax complexes
4. Long-range chromatin interactions
5. Noncoding RNA
6. Manipulating epigenetics

Labs:

- | | |
|--|---------|
| 1. Mapping genomewide methylation patterns in <i>Medicago truncatula</i> | |
| a. Bisulfite-sequencing: Library preparation | 3 weeks |
| b. Bisulfite-sequencing: Data analysis | 1 week |
| 2. Monitoring changes in histone modifications during differentiation by chromatin immunoprecipitation | 3 weeks |