

## **מעבדה בהיסתופתולוגיה – 1501.1003**

### **Laboratory in histopathology and immunehistology of neurodegenerative disease mouse models**

Language: The official language of the course is English.

4 point credits

The lab is limited to 30 students. 50 hours including laboratory

Course will take place during the summer.

#### **Course lecturers**

Dr. Dan Frankel, Dr. Eran Pearlson , Dr. Dinorah Friedmann-Morvinski

#### **Lab is composed of:**

- 4 days of theoretical lectures
- 6 days lab work
- The Final grade (100%) is consisted of three lab reports (20% each), three quizzes (10% each) and student evaluation by TA (10%).

The lab is designed for graduate student with background in neurobiology. The lab will be held daily for two weeks in the summer and will include both frontal lectures and practical work of basic histology and immunohistology of pathological features in the brain and spinal cord of mouse model. The lab will focus on three mouse models of neurological diseases: multiple sclerosis (MS) , Glioma and Amyotrophic Lateral Sclerosis (ALS). Frontal lectures will be focus on the background of each disease and explain the mouse models available for studying the disease. Furthermore, pathological features of in each model will be explained and student will learned the recommended histological and immunohistological approaches for monitoring disease progression. Markers of both neuronal and neuroinflammation : glia activation and immune cell infiltration will be discussed. In the practical work, students will learn different techniques of tissue processing towards preparing brain or spinal cord samples for basic histology and for immunohistology using chemical and specific dyes that can be observed by either light or fluorescent microscope. Special emphasize will be given for co-labeling of different pathological disease features.

#### **Topics that will be covered by the laboratory:**

1. Basic histology and immunohistology approach
2. Different types of tissue processing towards histology - frozen with paraffin
3. The use of different types of microscope : light microscope and fluorescent , confocal multiphoton microscopy.
4. Identification of different components of brain pathology that link to MS, Glioma and ALS
5. Different approach to present and analyze brain pathology towards preparing a report