

BIOLOGY 557: ULTRASTRUCTURAL TECHNIQUES

Fall 2007

Use of the Facility is predicated on successful completion of a portfolio of images utilizing these techniques and instruments. All images generated as part of this class are the property of the EM Facility.

This laboratory is intended to train students in electron and light microscopic techniques and will take a minimum average of 8 hours per week in the laboratory. Students are not permitted to work in the lab outside of 8:30 am-5 p.m. M-F without express permission of Dr. Barlow.

Students will learn how to

- prepare grids to support samples in the TEM,
- negatively stain small samples,
- preserve and embed samples for slicing,
- prepare knives used in slicing
- slice both thick and thin slices for light and electron microscopic examination
- create surface replicas of samples
- align and use the light and transmission electron microscope
- record and process images

Text: ELECTRON MICROSCOPY, J. Bozzola and L. Russell
2nd edition, Jones & Bartlett (1999)

EM Facility instrument tutorials

GRADING:

Late assignments carry a grade increment/day grading penalty:

Lab report I	Negative staining	20%
Lab report II	Thick sections	15%
Lab report III	Thin sections	25%
Lab report IV	Shadowing	20%
Lab report V	Tomography	10%
Lab report VI	Class presentation	10%
Laboratory Practicals	TEM	Required/credit
	Blocks and thick sections	Required/credit
	Microscopes & cameras	Required/credit

Lab activities will consist primarily of labeled micrographs highlighting each of the techniques discussed. Additional guidelines will be given out in class. Lab work will be graded on attendance, quality, timeliness, and adherence to guidelines

Tentative schedule of activities

TEM Practical should be completed by Friday noon, September 21

Negative stain is due no later than Monday noon, October 5

Trimmed block is due no later than Tuesday class, October 12

Thick sections report is due no later than Monday noon, October 19

Shadowing report is due no later than Monday noon, November 26

Tomography report is due no later than Monday noon, November 26

Thin slicing report is due no later than Monday noon, December 3

Class presentation is December 4