

## 98 (2) Introductory Laboratory of Model Organisms 模式生物學入門實驗

### Teachers:

彭明德	<a href="mailto:mdperng@life.nthu.edu.tw">mdperng@life.nthu.edu.tw</a>	LSI 105W	ext 42024
王歐力	<a href="mailto:owagner@life.nthu.edu.tw">owagner@life.nthu.edu.tw</a>	LSI R507	ext 42487
桑自剛	<a href="mailto:tksang@life.nthu.edu.tw">tksang@life.nthu.edu.tw</a>	LSI R221	ext 42474
江運金			

### Major TAs:

韓竹婷	<a href="mailto:cthan@life.nthu.edu.tw">cthan@life.nthu.edu.tw</a>	LSII R330	ext 35859
謝雅薰	<a href="mailto:aconitate@hotmail.com">aconitate@hotmail.com</a>	LSII R330	ext 35859
陳柏如	<a href="mailto:pjchen@life.nthu.edu.tw">pjchen@life.nthu.edu.tw</a>	LSII R330	ext 35859
李怡萱	<a href="mailto:yhli@life.nthu.edu.tw">yhli@life.nthu.edu.tw</a>	LSII R330	ext 35859
謝怡娟	<a href="mailto:amanda@life.nthu.edu.tw">amanda@life.nthu.edu.tw</a>	LSII R330	ext 35859
葉芷微	<a href="mailto:bioclass@life.nthu.edu.tw">bioclass@life.nthu.edu.tw</a>	LSII R330	ext 35859

上課地點: General Biology Laboratory LSII R 103

上課時間: Monday, 1:10 pm ~ 5:10 pm

## Syllabus

Week	Date	Teacher	TA	Topic	Content
1	2/22	彭明德	謝雅薰、 陳柏如	Introduction and organization	1. Introduction to this laboratory course 2. Grouping and cleaning the lab.
2	3/1	彭明德	謝雅薰、 陳柏如	Yeast (I)	Observation of the mating in yeast
3	3/8	彭明德	謝雅薰、 陳柏如	Yeast (II)	Analysis of budding patterns--calcofluor staining of bud scars
4	3/15	彭明德	謝雅薰、 陳柏如		
5	3/22	王歐力	李怡萱、 韓竹婷	Gene transfer	We learn how to maintain and handle worms. We are then going to transfer a gene encoding for a fusion protein from a wild-type worm to a mutant worm.
6	3/29	王歐力	李怡萱、 韓竹婷	Mutant phenotypes	We are observing various mutant phenotypes and perform a chemotaxis experiment as well as a mutation-based dye-filling defect in sensory neurons
7	4/5				清明節放假一天
8	4/12	王歐力	李怡萱、 韓竹婷	Identifying a mutation using restriction enzyme analysis	We are isolating genomic DNA from wild-type and mutant worms and using restriction enzyme analysis to identify a point-mutation and PCR to identify a broad deletion.
9	4/19	王歐力	李怡萱、 韓竹婷	Mitochondria tracking	We use Mitotracker green to stain mitochondria in a worm. We then track and measure the mitochondria speed in the living worm with and without a mutation.
10	4/26	桑自剛	陳柏如、 葉芷微	The basic of Drosophila	Drosophila genetics, virgin collection, setup cross for the following experiments, mapping transgene, polytene chromosome preparation
11	5/3	桑自剛	陳柏如、 葉芷微	Immunohistochemistry	Immunostaining of Drosophila eye disc and larval brain
12	5/10	桑自剛	陳柏如、 葉芷微	Embryogenesis and Cell cycle	Real-time analysis of early embryogenesis and chromosome division
13	5/17	桑自剛	陳柏如、 葉芷微	Fly behavior	Climbing and flight assays, tour the learning and memory laboratory of BRC
14	5/24	江運金	謝怡娟、 韓竹婷	Introduction to zebrafish	Introduction to zebrafish physiology and basic experimental technique
15	5/31	江運金	謝怡娟、 韓竹婷	Effects of vascular development	Effect of lithium chloride, alcohol, caffeine and nicotine on zebrafish vascular development
16	6/7	江運金	謝怡娟、 韓竹婷	Electrocardiogram	Comparison between human and zebrafish electrocardiogram (ECG)
17	6/14	江運金	謝怡娟、 韓竹婷		
18	6/21			實驗室清潔與器材保養	