

Course Syllabus – MB&B 251L (S18)

1/16	0.	Registration and Organizational meeting in SCL 147 at 1.00pm
1/18	1.	Project I: The Genetics of Protein Structure: Staphylococcal Nuclease (Introductory lecture) Lab tour and introduction to lab equipment in SCL147 Mutagenesis: primary PCR reaction
1/23	2.	Primary PCR reaction products: Purification Mutagenesis: Secondary PCR reaction (Lecture)
1/25	3.	Cut vector and insert (product of secondary PCR reaction) Check products of the 2nd PCR reaction and digests on an agarose gel. Set up ligations. (Lecture)
1/30	4.	Transformation of competent cells with ligation mixture
2/1	5.	Assay of recombinant M13 plaques for nuclease activity using a plate agar assay. Selection of plaques for single-stranded DNA preps.
2/6	6.	Isolation of single-stranded DNA from cell cultures: submission of DNA template for sequencing to Keck facility (Lecture)
2/8	7.	Sequencing analysis of mutated clones and Computer graphic analysis of staphylococcal nuclease mutants (Lecture) Problem set 1 due
2/13	8.	Computer graphic analysis of staphylococcal nuclease mutants (Lecture)
2/15	9.	Project II: a) Purification of Dihydrofolate Reductase (DHFR) (Introductory lecture). Affinity column chromatography and Assay
2/20	10.	SDS-PAGE Report 1 due
2/22	11.	*Project II: b) Kinetics of Triosephosphate Isomerase (TIM) (Introductory lecture).
2/27	12.	Project II: c) Binding Kinetics of CD16 receptor protein to igG using Surface Plasmon Resonance (SPR) (Demonstration & quiz).
3/8	13.	Report 2 due

** Students will be given block of time in which to do this lab and they should strictly adhere to the schedule in order to accommodate everyone fairly.*

*** Information on Course Registration, Organization, Requirements, Material and Grades can be found under "Announcements" section.**

Inclusivity: *This class strives to be an inclusive community, learning from the many perspectives that come from having differing backgrounds and beliefs. As a community, we aim to be respectful to all, regardless of race, ethnicity, religion, gender or sexual orientation. We expect that faculty, students and teaching assistants will create an environment that facilitates inquiry and self-expression, while also demonstrating diligence in understanding how others' viewpoints may be different from their own.*