Core Techniques in Protein and Genetic Engineering
Oncology 675-001
July 19-23, 2021

This course will have four unique components. To successfully complete this course, students will need to submit pre-work assignments in a timely fashion and engage with asynchronous course materials. We will meet face to face the week of July 19-23, 2021 and will make efficient use of our time by completing laboratory activities, including analyses as well as other relevant activities.

The four components of the course are:

1. **Pre-work**–Asynchronous material will be posted to the course Canvas site at least one week prior to July 19. You may watch lectures and complete quizzes, worksheets, and other evaluation materials beginning July 12. Please note that some items will have deadlines associated with the in-person content.
2. **Evaluation** – Evaluation of your engagement and learning will include quizzes, worksheets, data analyses, and in person attendance and contributions to class. As noted above, some items will be bound to deadlines associated with our in-person modules.
3. **In-person** – Several hours per day have been designated for in-person attendance the week of July 19-23, 2021. Please review the schedule and plan to be on the Promega campus during that time.
4. **Office hours/Individual Consultations** – These can be scheduled as needed throughout the week of July 19-23, 2021.

Schedule:

Date	Time	Module	Instructor
Monday, July 19			
Asynchronous Pre-work and Evaluation Materials *Please check Canvas for recordings and evaluation materials, which must be completed prior to attending in person.*			
		Lecture Basics of nucleic acid isolation	Sarah Teter
Additional Assignments:	TBD		
In-Person Schedule			
	9:00a – 9:30a	Welcome and Introductions	Amy Prevost
	9:30a – 11:00a	*Laboratory* Nucleic acid isolation from tissues	Sarah Teter, Amy Prevost
	11:00a -12:30p	*Lecture* Overview of protein expression and purification	Dick Burgess
	12:30p – 1:30p	*Lecture* Cloning tools and techniques	Jim Hartnett
	1:30p – 2:30p	*Laboratory* Cloning – RT-PCR amplification	Natalie Betz, Amy Prevost

Date	Time	Module	Instructor
Tuesday, July 20			
Asynchronous Pre-work and Evaluation Materials *Please check Canvas for recordings and evaluation materials, which must be completed prior to attending in person.*			
		Lecture PCR Technologies	Rod Pennington
Additional Assignments:	TBD		
In-Person Schedule			
	9:00a – 10:15a	*Laboratory* Cloning – RT-PCR analysis and ligation reaction	Natalie Betz, Amy Prevost
	10:15a – 12:15p	*Lecture and Laboratory* Plasmid Purification	Doug White, Amy Prevost
	12:15p – 1:15p	*Laboratory* Cloning – Transformation	Natalie Betz, Amy Prevost
	1:15p – 2:15p	*Chalk Talk and Laboratory* RT-qPCR	Natalie Betz, Amy Prevost Guest: Rod Pennington
	2:15p – 2:30p	*Laboratory* Plating cells	Amy Prevost
Wednesday, July 21			
Asynchronous Pre-work and Evaluation Materials *Please check Canvas for recordings and evaluation materials, which must be completed prior to attending in person.*			
		Lecture Reporter Gene Assays	Carl Strayer
Additional Assignments:	TBD		
In-Person Schedule			
	9:00a – 11:00a	*Lecture and Laboratory* Transfection	Erica Golueke, Amy Prevost Guest: Sandy Tseng
	11:30a – 12:30p	*Laboratory* Analysis of RT-qPCR Data	Natalie Betz, Amy Prevost
	12:30p – 1:15p	*Laboratory* Start Colony PCR	Natalie Betz, Amy Prevost
	1:15p – 2:30p	*Lecture* Characterizing Proteins	Mike Rosenblatt
Thursday, July 22			
Asynchronous Pre-work and Evaluation Materials *Please check Canvas for recordings and evaluation materials, which must be completed prior to attending in person*			

Additional Assignments:	TBD		
In-Person Schedule			
	9:00a – 10:00	*Laboratory* Protein purification from mammalian cells using tags	Natalie Betz, Amy Prevost
	10:00a – 11:30a	*Lecture* Protein purification from mammalian cells using tags	Rachel Ohana
	11:30a – 12:15p	*Laboratory* Protein purification from mammalian cells using tags	Natalie Betz, Amy Prevost
	12:15p – 1:15p	*Lecture* Using Halotag to study protein degradation	Elizabeth Caine
	1:15p – 2:30p	*Laboratory* Gel analysis colony PCR Protein purification form mammalian cells using tags	Natalie Betz, Amy Prevost
Friday, July 23			
Asynchronous Pre-work and Evaluation Materials *Please check Canvas for recordings and evaluation materials, which must be completed prior to attending in person*			
		Lecture Western Blot, ICC and ELISA	Chris Eggers
Additional Assignments:	TBD		
In-Person Schedule			
	9:00a – 2:00p	*Laboratory* Western Blot Transfection results Mammalian protein purification results Wrap up and Closing	Chad Zimprich, Amy Prevost Natalie Betz, Erica Golueke Guest: Chris Eggers Amy Prevost
	2:00p – 3:00p	*COVID Permitting – Outdoor Reception*	