

2018 IGTRCN Short Technical Course Syllabus

	Sunday 22-Jul	Monday 23-Jul	Tuesday 24-Jul	Wednesday 25-Jul	Thursday 26-Jul	Friday 27-Jul					
7:00		Hotel Shuttle or Walk to IBBR	Hotel Shuttle or Walk to IBBR	Hotel Shuttle or Walk to IBBR	Hotel Shuttle or Walk to IBBR	Hotel Shuttle or Walk to IBBR					
		Breakfast 2129	Breakfast 2129	Breakfast 2129	Breakfast 2129	Breakfast 2129					
8:00		Lecture 1 2129	Lecture 3 2129	Lecture 5 2129	Lecture 7 2129	Lecture 9 2129					
9:00		Coffee Break		Coffee Break	Coffee Break	Coffee Break					
		Demo: Micro- manipulation	Demo: Micro- Injections	Mosquito Team Work	Demo: Needle Technology	Coleoptera Team Work	Gene Editing	Sandflies/Clo gmia Team Work	Gene Editing	Students' Choice of Insects	Gene Editing
10:00		3212	3215	3212/3215	3215	3212/3215	3109	3212/3215	3109	3212/3215	3109
11:00		Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H
12:00		Lunch 2129		Lunch 2129	Lunch 2129	Lunch 2129	Lunch 2129	Lunch 2129	Lunch 2129	Lunch 2129	Lunch 2129
		Lecture 2 2129	Lecture 4 2129	Lecture 6 2129	Lecture 8 2129	Lecture 10 2129					
1:00		Demo: Micro- Injections	Demo: Micro- manipulation	Demo: Needle Technology	Mosquito Team Work	Gene Editing	Coleoptera Team Work	Gene Editing	Sandflies/Cl ogmia Team Work	Gene Editing	Students' Choice of Insects
2:00		3215	3212	3215	3212/3215	3109	3212/3215	3109	3212/3215	3109	3212/3215
	Hotel Shuttle or Walk to IBBR	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H	Teams A,B,C,D	Teams E,F,G,H
3:00	Student Orientation	Coffee Break		Coffee Break				Coffee /Group Photo		Coffee Break	
		Construct Simple Injection System	Mosquito Team Work	Larva/Pupa/ Adult Injections		Mosquito Team Work	Larva/Pupa/ Adult Injections	Course Debrief/ Lessons Learned			
4:00	Chalk Talks & Pizza	2129		Teams A,B,C,D	Teams E,F,G,H	Teams E,F,G,H	Teams A,B,C,D	1st Floor Lobby			
5:00	2129	2129		Teams A,B,C,D	Teams E,F,G,H	Teams E,F,G,H	Teams A,B,C,D	1st Floor Lobby			
6:00	Shuttle or Walk to Hotel	Shuttle or Walk to Hotel		Shuttle or Walk to Hotel				Shuttle or Walk to Hotel		Shuttle or Walk to Hotel	
7:00		Dinner on your own		Dinner on your own		FREE		Dinner on your own		Dinner on your own	
8:00											
9:00											
10:00											

2018 IGTRCN Technical Short Course Lectures

Lecture 1 2129	Embryology & Development Urs Schmidt-Ott University of Chicago	Because the major mode for delivering genetic technologies to insects for both germline and somatic analysis is injection of preblastoderm embryos, a understanding of insect embryogenesis is essential. This lecture will provide the required foundation.
Lecture 2 2129	History of efforts to genetically modify insects Al Handler USDA-ARS, Gainesville, Florida	This lecture will provide a historical perspective that recalls the efforts to create genetically modified insects. Transposons figure prominently as do the needs for other technologies besides functional vectors.
Lecture 3 2129	Transposons & applications to insect control Al Handler USDA-ARS, Gainesville, Florida	The application of genetic technologies to problems of insect control has been a major objective. This lecture will review the efforts to used genetic technologies for insect control.
Lecture 4 2129	CRISPR/Cas9 Technologies + Utility of Somatic N Tassos Pavlopoulos HHMI - Janelia	This lecture will review Cas9-based technologies that go beyond 'simple' mutagenesis. It will also illustrate the utility of Cas9 somatic mutagenesis as a viable alternative to germline mutagenesis.
Lecture 5 2129	RNAi Urs Schmidt-Ott University of Chicago	Gene silencing remains a critical tool for functional genomic analysis. This lecture will review the technology and current best practices
Lecture 6 2129	Site Specific Recombination & Binary Expression Peter Atkinson UC Riverside	This lecture will review site specific recombination technologies and their applications, and binary expression systems and their application and utility.
Lecture 7 2129	Delivery of Technologies to Cells David O'Brochta University of Maryland	This lecture will explore various strategies for delivering insect genetic technologies to target cells. It will include variations of the microinjection strategy, electroporation, biolistics, viruses, liposomes and receptor mediated strategies. The aim is to open the student's minds to a solution space beyond microinjection.
Lecture 8 2129	Gene Drive Drew Hammond Imperial College, London	This lecture will review the history of interest in and the current state of the art of gene drive research and development.
Lecture 9 2129	Project Life Cycle - Peter Atkinson UC Riverside	This lecture will review the entire project life cycle associated with the creation of genetically modified insects for which there are no existing protocols or experience.
Lecture 10 2129	Regulatory Issues: Releasing GM Insects Brinda Dass Foundation for the NIH	This lecture will describe regulatory issues associated with releasing transgenic insects in the field using past examples (Oxitec) and current examples (Gene Drive)