

ISRB Inaugural Meeting Practical Course 2,3,6 September

Purpose: To introduce trainees to several model organisms of regeneration including practical aspects and key experiments to study regeneration in that organism

Organisms included: Planaria (Lecture), Zebrafish (Lecture), Annelids (Practical), Nematostella (Practical), Axolotl (Practical)

Instructors:

Bret Pearson, Oregon Health & Science University, Planaria

Ken Poss, Duke, Zebrafish

Lauren Walker, Penn, Zebrafish

Sanjay Narayanawamy, UVienna, Nematostella

Ulrich Technau, UVienna, Hydra

Florian Raible, UVienna, Annelid

Elly Tanaka, IMP, Axolotl

Participants: Max 20

Schedule:

2 September			
9:00	Course opening		
9:15	Lecture: Planaria	Bret Pearson	IMP seminar room
10:00	Lecture: Zebrafish adult	Ken Poss	IMP seminar room
10:45	Lecture: Zebrafish larvae	Lauren Walker	IMP seminar room
11:30	Lunch		

12:30	Practical: Nematostella	Ulrich Technau and Sanjay Narayanawamy	UBB
16:00	Practical: Annelid	Forian Raible	UBB
19:00	Leave for Heuriger		
3 September			
9:00	Practical: Axolotl	Elly Tanaka	IMP
12:30	Lunch		
6 September	Check samples	rotating	
		Uli and Sanjay	UBB
		Florian Raible	UBB/IMP
		Elly Tanaka	IMP

Axolotl:

Participants will learn cells are transfected in axolotl appendages and labeled cells followed in regeneration.

They will also learn how tissues are transplanted from one blastema to another

Hydra:

Participants will learn how to do top-bottom grafts to follow stem cell migration and differentiation and perhaps lateral transplants to test for axis induction or suppression.

Nematostella:

Participants will learn how to dissociate and reaggregate early embryonic stages of Nematostella and follow their fate depending on aggregate size and cellular composition.

Annelids:

Participants will learn how to perform axial regeneration experiments, and how the outcome of these experiments can be modulated by changing the hormonal state of individuals.

Planarians:

Participants will learn how to perform various amputation experiments on planarians and determine how specific regeneration could be tested in RNAi conditions.

Zebrafish

We will present a two-part lecture on using zebrafish as a model for regeneration across larval and adult stages. Participants will learn what tissues are currently studied as regeneration models, surgical and genetic injury models, equipment needed to support a zebrafish regeneration lab, and the impact that zebrafish have had on a larger field such as heart or nerve regeneration.