

12th Advances in Stem Cell Biology

WEEK 1-JUNE 23 TO JUNE 28 2025

Monday June 23 2025		
09:00 - 09:30	Welcome Coffee - Administrative instructions	Education Center - Virginie Ponticelli, Sylvie Malot (Institut Pasteur – Paris - France)
09:30 - 11:00	General course introduction	Shahragim Tajbakhsh (Institut Pasteur – Paris - France) Laure Bally Cuif (Institut Pasteur – Paris - France)
11:00 - 11:40	Participants' presentations (5 min/participant max.)	Participants 1-7
COURSE 1-REPROGRAMMING OF HUMAN SOMATIC CELLS		
11:40 - 12:40	Lecture 1 : Reprogramming somatic cells: Overview	Laurence Daheron (Harvard Stem Cell Institute, Boston, USA)
12:40 - 13:40	Lunch Break	
13:45 - 14:00	Safety instructions	Théo Putigny et Camille Carpentier (Institut Pasteur – Paris - France)
14:00 - 18:30	<u>Course 1</u> Hands-on and analysis <u>16:00 – 16:45 (Lecture)</u> Culture systems for human pluripotent stem cell	Laurence Daheron (Harvard Stem Cell Institute – Boston - USA) Frank Yates (SupBiotech – Villejuif - France) Michel Cohen-Tannoudji (Institut Pasteur – Paris - France)
18:30 - 19:10	Participants' presentations (5 min/participant max.)	Participants 8-14
20:00	<i>Dinner with experts : “Le 46”, 46 Rue de Falguière, 75015 Paris</i>	

Tuesday June 24 2025		
COURSE 1-REPROGRAMMING OF HUMAN SOMATIC CELLS		
09:00 - 11:00	<u>Course 1</u> Hands-on and analysis	Laurence Daheron (Harvard Stem Cell Institute – Boston - USA) Frank Yates (SupBiotech – Villejuif - France) Michel Cohen-Tannoudji (Institut Pasteur – Paris - France)
11:00 - 12:30	<u>Lecture :</u> Epithelial stem cells in cell and gene therapy	Michele De Luca (University of Modena and Reggio Emilia, Italy)
12:30 - 14:00	Lunch Break	
14:00 - 18:00	<u>Course 1</u> Hands-on and analysis <u>14:10-15:30 (Lectures)</u> • Pluripotent stem cell characterisation • Introduction to gene editing in Human pluripotent stem cells	Laurence Daheron (Harvard Stem Cell Institute – Boston - USA) Frank Yates (SupBiotech – Villejuif - France) Michel Cohen-Tannoudji (Institut Pasteur – Paris - France)
17:45 - 18:45	<u>Lecture 2 :</u> Induced Pluripotent Stem Cells Applications: from bench to organoids	Frank Yates (SupBiotech, Villejuif, France)

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Wednesday June 25 2025		
09:00 - 10:00	Free discussion	Shahragim Tajbakhsh & Laure Bally Cuif (Institut Pasteur – Paris - France)
COURSE 2 – CRE-LOX TRACKING OF ADULT NEURAL STEM CELLS IN THE ZEBRAFISH BRAIN		
10:30 - 11:00	Course 2 Introduction	Laure Bally-Cuif (Institut Pasteur – Paris - France) Tanya Foley (Institut Pasteur – Paris - France)
11:00 - 18:30	Course 8 - 2 groups in parallel Hands on and analysis	Isabelle Foucher (Institut Pasteur – Paris - France)
	Lunch 11:45-12:45 (Group2) 12:45-13:45 (Group1)	Sara Ortica (Institut Pasteur – Paris - France)
Thursday June 26 2025		
09:00 - 10:30	Lecture: Single-cell multi-omics integration	Laura Cantini & Stephan Fischer (Institut Pasteur – Paris - France)
10:30 – 11:00	Coffee break and discussion	
11:00 - 12:30	Lecture : Stem and niche cells in development and regeneration	Shahragim Tajbakhsh (Institut Pasteur – Paris - France)
12:30 - 13:30	Lunch Break	
COURSE 3 – ISOLATION OF SKELETAL MUSCLE STEM CELLS ON SINGLE MYOFIBRES		
13:30 - 18:30	Course 3 Hands on and analysis	Barbara Gayraud-Morel (Institut Pasteur – Paris - France) Shahragim Tajbakhsh (Institut Pasteur – Paris - France) Brendan Evano (Institut Pasteur – Paris - France)
Friday June 27 2025		
09:00 - 10:30	Lecture : Intestinal stem cells	Marc van de Wetering (Prinses Maxima Centrum - Utrecht- NL)
10:30 – 11:00	Coffee break and room change	
11:00 - 12:30	Lecture : Gastrulation: a pluripotent stem cell perspective	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain)
12:30 - 14:00	Lunch Break	
COURSE 4 - MOUSE INTESTINAL ORGANIDS: HOW TO MAKE MINIGUT		
14:00 - 18:30	Course 4 Crypts extraction and organoid culture	Giulia Nigro (Institut Pasteur – Paris - France) Marc van de Wetering (Prinses Maxima Centrum – Utrecht - NL) Sophie Dulauroy (Institut Pasteur – Paris - France) Aline Stedman (IBPS – Paris – France)
19:00	Dinner with experts (To be defined)	

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Saturday June 28 2025		
09:00 - 10:30	<u>Lecture :</u> <i>What do we learn by trying to reproduce a mammalian embryo in a dish?</i>	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain)
COURSE 5 - STUDYING CELL FATE DECISIONS IN ESCs		
10:30 - 12:30	<u>Course 5</u> Generation of Aggregates	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)
COURSE 4 - MOUSE INTESTINAL ORGANOIDS: HOW TO MAKE MINIGUT		
12:30-13:30	<u>Course 5 – 2 groups in parallel –</u> Observation of crypts (with or without fluorescent microscope)	Giulia Nigro (Institut Pasteur – Paris - France) Marc van de Wetering (Prinses Maxima Centrum – Utrecht - NL) Aline Stedman (IBPS – Paris – France)

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WEEK 2 – JUNE 30 TO JULY 04 2025

Monday June 30 2025		
COURSE 6 - ORIGIN OF BLASTEMA CELLS DURING REGENERATION IN THE ANNELID <i>PLATYNEREIS DUMERILII</i>		
09:00 - 10:30	Lecture: <i>Understanding successful regeneration in animals</i>	Eve Gazave (Institut Jacques Monod – Paris - France)
10:30 - 13:00	Course 6 Hands on and analysis	Eve Gazave (Institut Jacques Monod – Paris - France) Zoé Velasquillo (Institut Jacques Monod – Paris - France)
13:00 - 14:00	Lunch Break	
COURSE 5 - STUDYING CELL FATE DECISIONS IN ESCs		
14:00 - 14:30	Course 5 Generation of Aggregates	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)
COURSE 7 - HEMATOPOIETIC STEM CELLS IN MOUSE AND MAN		
14:30 - 18:30	Course 7 Hands-on and Lecture: Hematopoiesis: from fetal liver to bone marrow	Ana Cumano (Institut Pasteur – Paris - France)
COURSE 1- REPROGRAMMING OF HUMAN SOMATIC CELLS		
18:30 - 19:00	Course 1 Analysis	Frank Yates (SupBiotech – Villejuif - France) Michel Cohen-Tannoudji (Institut Pasteur – Paris - France)
Tuesday July 01 2025		
COURSE 7 - HEMATOPOIETIC STEM CELLS IN MOUSE AND MAN		
09:00 - 11:30	Course 7 Hands-on Analysis	Ana Cumano (Institut Pasteur – Paris - France)
11:30 - 13:00	Working groups/Discussion	Laure Bally-Cuif (Institut Pasteur – Paris - France) Shahragim Tajbakhsh (Institut Pasteur – Paris - France)
13:00 - 14:00	Lunch Break	
COURSE 8 - ANALYSING STEM-CELL LIKE BEHAVIOURS IN VIVO USING BIRD EMBRYO AS A MODEL SYSTEM		
14:00 - 18:00	Course 8 Embryo collection, electroporation and ex vivo culture	Charlène Guillot (iGReD - Marseille - France) Olinda Alegria-Prevot (Institut Pasteur – Paris - France)

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COURSE 5 - STUDYING CELL FATE DECISIONS IN ESCs

18:00 – 19:00	<u>Course 5</u> Applying Stimuli	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)
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Wednesday July 02 2025

COURSE 8 - ANALYSING STEM-CELL LIKE BEHAVIOURS IN VIVO USING BIRD EMBRYO AS A MODEL SYSTEM

09:00 - 11:00	<u>Course 8</u> Observation/imaging of GFP electroporated chick embryos	Charlène Guillot (iGReD - Marseille - France) Olinda Alegria-Prevot (Institut Pasteur – Paris - France)
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COURSE 4 - MOUSE INTESTINAL ORGANOIDs: HOW TO MAKE MINIGUT

11:00 - 12:30	<u>Course 4</u> Observation of crypts (with or without fluorescent microscope)	Giulia Nigro (Institut Pasteur – Paris - France)
12:30 - 12:45	<i>Group picture (Pasteur Museum)</i>	
12:45 - 14:00	<i>Lunch Break</i>	

COURSE 3 – ISOLATION OF SKELETAL MUSCLE STEM CELLS ON SINGLE MYOFIBRES

14:00 - 15:00	<u>Course 3</u> Observation of myoblast and myofibres in cultures	Barbara Gayraud-Morel (Institut Pasteur – Paris - France) Shahragim Tajbakhsh (Institut Pasteur – Paris - France) Brendan Evano (Institut Pasteur – Paris - France)
15:00 - 16:30	<u>Lecture</u> <i>Epithelial stem cell fate and potential</i>	Cédric Blanpain (UBL – Bruxelles - Belgium)

COURSE 5 - STUDYING CELL FATE DECISIONS IN ESCs

17:00 - 18:00	<u>Course 5</u> Changing Medium	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)
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Thursday July 03 2025

COURSE 4 - MOUSE INTESTINAL ORGANOIDs: HOW TO MAKE MINIGUT

09:00 – 10:15	<u>Course 4</u> Wrap-up	Giulia Nigro (Institut Pasteur – Paris - France)
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COURSE 3 – ISOLATION OF SKELETAL MUSCLE STEM CELLS ON SINGLE MYOFIBRES		
10:15 - 11:00	Course 3 Wrap-up	Barbara Gayraud-Morel (Institut Pasteur – Paris - France) Shahragim Tajbakhsh (Institut Pasteur – Paris - France) Brendan Evano (Institut Pasteur – Paris - France)
11:15 - 12:45	Lecture: <i>Emerging technologies to probe and manipulate stem cell fate and self-organisation</i>	Matthias Lutolf (École Polytechnique Fédérale de Lausanne, CH)
12:45 - 14:00	<i>Lunch Break</i>	
14:00 – 15:00	Visit of the Mouse Genetics Engineering Center (CIGM)	Francina Langa Vives and CIGM team (Institut Pasteur – Paris - France)
COURSE 9 - MOUSE GENETICS ENGINEERING CENTER COURSE 5 - STUDYING CELL FATE DECISIONS IN ESCs		
15:30 - 18:00	Course 9 Transgenesis Demo 15:00-16:30 (Group1) 16:30-18:00 (Group2)	Francina Langa Vives and CIGM team (Institut Pasteur – Paris - France)
	Course 5 Observation 15:00-16:30 (Group2) 16:30-18:00 (Group1)	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)

Friday July 04 2025		
COURSE 5- STUDYING CELL FATE DECISIONS IN ESCs		
09:00 - 10:30	Course 5 Observation / Wrap-up	Alfonso Martinez Arias (Universidad Pompeu Fabra - Barcelona - Spain) David Turner (University of Liverpool - UK)
10:30 -11:00	Coffee break and room change	
11:00 - 12:30	Lecture: <i>Making muscle: The development and function of different muscle stem cells through vertebrate evolution.</i>	Peter Currie (ARMI – Monash University – Clayton - Australia)
12:30 -13:30	Lunch Break	
COURSE 6 - ORIGIN OF BLASTEMA CELLS DURING REGENERATION IN THE ANNELID <i>PLATYNEREIS DUMERILII</i>		
13:30 - 16:00	Course 6 Hands on and analysis	Eve Gazave (Institut Jacques Monod – Paris - France) Zoé Velasquillo (Institut Jacques Monod – Paris - France)
16:00 – 18:00	Wrap up & course closing	Shahragim Tajbakhsh (Institut Pasteur – Paris - France) Laure Bally-Cuif (Institut Pasteur – Paris - France)
20:00	Dinner with experts (Capitaine Fracasse (boat))	