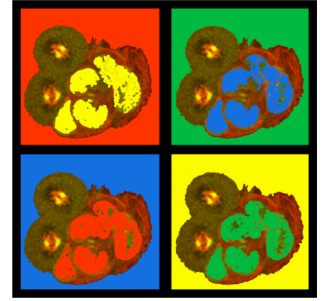


**2008 Frontiers in Human Embryonic Stem Cells
Advanced Training Course
May 30-June 6
MBL – Woods Hole, MA**



Program Organizers

Gerald P Schatten, PhD
Pittsburgh Development Center.

Roger Pedersen, PhD
University of Cambridge

Organizing Committee: Christopher Navara, PhD; Calvin Simerly, PhD;
Diane Carlisle, PhD; Ahmi Ben-Yehudah, PhD; Carlos Castro, MD; Maya Mitalipova, PhD;
Carrie Redinger, MS; David McFarland, BS; Jody Mich-Basso, BS; Stacie Oliver, BS;
Virginia Penascino, BS

Lectures may be audited [space-permitting], but please allow for priority seating by the course participants and faculty.

Unless otherwise noted, all meals are at Swope.

Friday May 30, 2008

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| 6:30-7:30 PM | Dinner, Welcome, and Introductions
Gerald Schatten
Loeb Laboratory 2 nd Floor Lobby |
| 7:30-8:30 PM | Biosafety, Regulatory Restrictions, MTAs, and Team Assignments
Chris Navara |
| 8:30-9:30 PM | Reception |

Saturday May 31, 2008: Propagation, Passaging, and Characterization of Human Embryonic Stem Cells

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| 7:30-8:30 AM | Breakfast |
| 8:30-10:00 AM | Lecture: hESC Propagation, Characterization and Quality Control
Christopher Navara |
| 10:00-10:30 AM | Coffee Break |
| 10:30-12:00 PM | Lab Introduction: Chris Navara |
| 12:00-1:15 PM | Lunch |

- 1:30 PM **Lab:** During this lab students will learn to identify healthy undifferentiated hESC colonies, manual passaging of colonies, feeder cell isolation and preparation and feeder free culture. We will discuss the relative merits and indications for the different methods of propagation. The students will also learn the basic techniques of stem cell characterization. Immunocytochemistry for Oct-4, SSEA-4, Tra-1-60, Tra-1-81 and alkaline phosphatase.
- 6:00-6:45 PM Dinner
- 7:00-8:00 PM **Lecture:** Clinical and Laboratory Analysis of Teratomas
Carlos Castro
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Sunday, Jun 1, 2008: Chimera and Teratomas

- 7:30-9:15 AM Breakfast on own
- 9:30-10:30 AM **Lecture:** Chimera Formation, Ethical and Technical Constraints
Chris Navara
- 10:30-12:00 PM **Lab Introduction:** Chris Navara and Carlos Castro
- 12:00-12:45 PM Lunch
- 1:00 PM **Lab:** In this laboratory the students will make both aggregation and injection chimeras using mouse embryonic stem cells and mouse embryos. In addition, participants will also learn the histological techniques for and skills for identifying tissue types in teratomas. We will also finish the necessary immunocytochemistry from Day 1.
- 6:00-6:45 PM Dinner – BBQ with the Frontiers in Reproduction Course Trainees
- 7:00-8:00 PM **Lecture:** Liver Regeneration
Paul Monga
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Monday June 2, 2008: Karyotyping and Microscopy

- 8:00-9:00 AM Breakfast
- 9:00-10:30 AM **Lecture:** Karyotypic Stability of ES Cells
Maya Mitalipova
- 10:30-10:45 AM Coffee Break

10:45-11:45 AM	Lab Introduction: Maya Mitalipova
12:00-12:45 PM	Lunch
1:00 PM	Lab: We will learn the techniques for verifying chromosomal number by karyotyping. In addition, we will analyze previously stained immunohistochemistry slides fluorescent microscopy.
5:00 PM	Lecture: Oocyte Transcriptional Profiling: Implications for Stem Cell Research Pasquale Patrizio
6:00-6:45 PM	Dinner
7:00 PM	Lab Continuation if necessary

Tuesday June 3, 2008: Germ Stem Cells

8:00-9:00 AM	Breakfast
9:00-10:30 AM	Lecture: Male Germline Stem Cells Kyle Orwig
10:30-11:30 AM	Lab Introduction: Jens Ehmcke and Kyle Orwig
11:30-12:30 PM	Lunch
12:30 PM	Lab: In this lab students will learn the procedures of male germ cell isolation, identification and transplantation.
6:00-6:45 PM	Dinner
7:00 PM	Lecture: Introduction to Magnetic Activated Cell Sorting (MACS) for the Enrichment of Putative Stem Cells in Testis Cell Preparations Jens Ehmcke

Wednesday June 4, 2008

8:00-9:00 AM	Breakfast
9:00-10:45 AM	Lecture: Neural Regeneration with Pluripotent Stem Cells Jan Pruszk
10:45-11:00 AM	Coffee Break

11:00-12:00 PM	Lab Introduction: Jan Pruszk
12:00-12:45 PM	Lunch
1:00 PM	Lab: In this laboratory, trainees will learn the techniques for isolating specific hESC-derived subsets of therapeutic and scientific relevance using flow cytometry.
6:00-6:45 PM	Dinner
7:00 PM	Discussion: Career Strategies in Regenerative Medicine Jerry Schatten

Thursday June 5, 2008

7:30-8:30 AM	Breakfast
8:30-10:00 AM	Lecture: Muscle Derived Stem Cells Johnny Huard
10:00-10:15 AM	Coffee Break
10:15-11:30 AM	Lecture: Hematopoietic Stem Cells Bruno Peault
10:45-11:30 AM	Lab Introduction: Bruno Peault
11:30-12:45 PM	Lunch
1:00 PM	Lab: During this lab we will learn the important stages during murine in vivo differentiation. We will also examine some of the newest microscopy systems for evaluating cellular function.
6:00-6:45 PM	Dinner
7:00 PM	Lecture: Blastema Formation and Epimorphic Regeneration in a Mouse Model Ken Muneoka

Friday June 6, 2008

8:00-9:00 AM	Breakfast
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9:00-10:30 AM **Lecture:** Hematopoietic Differentiation from ES Cells
Elias Zambidis

10:30-11:00 AM Coffee break

11:00-12:00 **Lecture:** Stem Cell Ethics, ES, SCNT, iPS
Louis Guenin

12:00-1:00 PM Lunch

1:00 PM **FrHESC Student Symposium:** We will hold a minisymposium at which each participant will teach the students about their own research and plans for ES cell research. One of the strengths of the course is that chance to establish lifelong collaborations. In order to complete this minisymposium in time for our closing banquet and allow each student the opportunity to speak we will hold everyone to a five slide 10 minute limit.

Course Closing Banquet: Participant Awards

7:00 PM **Lecture:** Frontiers Today and Tomorrow
Gerald Schatten
