

APRIL 13 - 22, 2004 - CHOC/BURNHAM/NIH HUMAN EMBRYONIC STEM CELL CULTURE TRAINING COURSE

| | 4/13/04 Tuesday | 4/14/04 Wednesday | 4/15/04 Thursday | 4/16/04 Friday | 4/17/04 Saturday | |
|-------------|--|--|--|--|---|--|
| 7:15 & 7:40 | Shuttle to Burnham | Shuttle to Burnham | Shuttle to Burnham | Shuttle to Burnham | Shuttle to Burnham | |
| 8:00-9:00 | Breakfast. Introduction of faculty, instructors, and students | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day | |
| 9:00-10:00 | | 9:30- 10:30 Safety Lecture Larry Adelman | FUNDAMENTALS Culture Media: Shayne Boucher, Ian Lyons, Invitrogen | FUNDAMENTALS Photomicroscopy Bob Nazar, Olympus | FUNDAMENTALS Antibodies, Immunocytochemistry Rob Burgess, Chemicon | FUNDAMENTALS Patents and Legal Issues Matt Bohlman, WiCell |
| 10:15-11:15 | | 10:30- 11:30 Overview of the Course Philip Schwartz | LABORATORY Demonstration: Lentivirus transfection Ruchi Bajpai | LABORATORY Practical photomicroscopy Bob Nazar | LABORATORY Photograph cultures, change media Secondary antibody incubation Observe and photograph transfected cells | LABORATORY Change media Photograph cultures Photograph immunocytochemistry |
| 11:30-1:00 | 11:30-1:00 Burnham Orientation and Tour Larry Adelman and Jonathan Clarke | Observe cultures, change media | Photograph cultures, change media | | | |
| 1:00-2:00 | 1:10-1:25 Welcome Evan Snyder, Burnham Brent Dethlefs, CHOC | Lunch | Lunch | Lunch | Lunch | |
| 2:00-3:00 | 1:25-1:40 <i>Start Lunch Buffet</i> | LABORATORY Stem Cell Culture Methods Thaw HESC and HNSC Pass HESC Make embryoid bodies/differentiate HES Pass HNSC Initiate differentiation of NSC | LABORATORY Stem Cell Characterization I: Immunocytochemistry Primary antibody: markers of undifferentiated and differentiated cells (HESC and HNSC) Observe transfected cells Pass HES: second group of cultures | LABORATORY Demonstration and training: Transplantation of neural stem cells Jean Pyo Lee | Free time Optional group activities Dinner on your own | |
| 3:00-4:00 | 1:40-1:55 Introduction Philip Schwartz | | | | | |
| 4:00-5:00 | 2:00-3:15 Derivation of human embryonic stem cells Jeanne Loring | | | | | |
| 5:00-6:00 | 3:30-4:45 Derivation of human neural stem cells Philip Schwartz | | | | | |
| 6:00-7:00 | LABORATORY Preparation for culture of stem cells Substrata, Feeder layers, Media, Observe cultures | | | | | |
| 7:00-8:00 | Dinner with Faculty | Dinner with Faculty | Dinner with Faculty | Dinner with Faculty | | |
| 8:00-9:15 | 8:00 Shuttle to Hotel | Guest Faculty Lecture: Theo Palmer: Characterization Of Stem Cells by Immunocytochemistry | Guest Faculty Lecture: Melissa Carpenter: HESC Methods: Feeder-Free Culture and Neuronal Differentiation | Faculty Lecture: Evan Snyder Neural Stem Cell Transplantation | | |
| 9:15 & 9:40 | Free time to review course materials | Shuttle to Hotel | Shuttle to Hotel | Shuttle to Hotel | | |

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| | 4/18/04 Sunday | 4/19/04 Monday | 4/20/04 Tuesday | 4/21/04 Wednesday | 4/22/04 Thursday |
|------------------------|--|--|--|--|--|
| 7:15 & 7:40 | Breakfast on your own Free time | Shuttle to Burnham | Shuttle to Burnham | Shuttle to Burnham | Shuttle to Burnham |
| 8:00-9:00 | | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day | Breakfast Discussion & Announcements Overview of the day |
| 9:00-10:00 | | FUNDAMENTALS David Smotrich: IVF Methods, Stem Cell Resource | FUNDAMENTALS Yoav Altman: FACS Analysis | FUNDAMENTALS Tristan Williams: Gene Expression Microarrays | Burnham Faculty Lecture: Somatic Stem Cells: the Dogma and the Reality Alexey Terskikh: Hematopoietic Stem Cells Fred Levine: Pancreatic Stem Cells: Do They Exist? |
| 10:15-11:30 | | DISCUSSION in the lab Cryopreservation Ling Wang | LABORATORY Stem Cell Characterization III: Cell sorting | LABORATORY Stem Cell Characterization IV: Transcript markers | |
| 11:30-1:00 | | Shuttle to Burnham | LABORATORY Freezing stem cells | Preparation of cells for FACS (HNSCs only) FACS demonstration | RTPCR for stem cell markers |
| 1:00-2:00 | Lunch | Lunch | Lunch | Lunchtime seminar: Jane Lebkowski, Geron | Lunch |
| 2:00-3:00 | DISCUSSION in the lab Open discussion with instructors. Topics to be chosen by students LABORATORY Free lab time for repeating or finishing experiments. | DISCUSSION in the lab Stem Cell Characterization II: Karyotyping Chih-Lin Hsieh | LABORATORY FACS, continued Computer Lab: Analysis of FACS data | LABORATORY RTPCR for marker gene transcripts, continued. | DISCUSSION in the lab Mouse vs. Human ES cells Robin Wesselschmidt |
| 3:00-4:00 | | LABORATORY | | DISCUSSION | LABORATORY |
| 4:00-5:00 | | Reading karyotypes Methods for counting chromosomes | | Planning and analysis of microarray experiments (2nd Floor Conference Room) | Finish experiments, discuss results |
| 5:00-6:00 | | | | | 5:00- 6:15 Guest Faculty Lecture: Arlene Chiu NIH funding guidelines |
| 6:00-7:00 | | | | | Free time on campus |
| 7:00-8:00 | Dinner with Faculty | Dinner with Faculty | Dinner with Faculty | Dinner with Faculty | 7:30 Special Dinner |
| 8:00-9:15 | Faculty Lecture: Henry Klassen Retinal Transplantation | Burnham Faculty Lecture: Mark Mercola <i>Discovery of Factors for ES Cell Differentiation</i> | Guest Faculty Lecture: Ian Duncan <i>Purification and Differentiation of Oligodendroglia Precursors</i> | Guest Faculty Lecture: Dan Geschwind <i>Microarray Analysis in Neurobiology</i> | |
| 9:15 & 9:40 | Shuttle to Hotel | Shuttle to Hotel | Shuttle to Hotel | Shuttle to Hotel | Shuttle to Hotel |