2016 ZEBRAFISH GENETICS AND DEVELOPMENT COURSE SCHEDULE

Sun 7 Aug
18:00 – 18:30 Light dinner – cold cuts & veggies (Loeb G70)
18:30 – 18:45 Course Welcome: Erez Raz, Sharon Amacher and Corinne Houart (course directors) (Loeb G70)
18:45 – 19:45 Lecture: Overview of zebrafish fish development and genetics: Lila Solnica-Krezel (Loeb G70)
19:45 – 21:30 Poster Session & Beer (Loeb G70)

Mon 8 Aug
08:30 – 09:15 MBL Orientation, Health and Safety, IACUC Training (Loeb 160)
09:15 – 12:00 Pit Talk and Lab: Early zebrafish development: Lila Solnica-Krezel, Dave Raible (Loeb 160)
13:00 – 13:30 Introduction to stereoscopes: Dave Raible (Loeb 160)
13:30 – 17:30 Adult dissections and Regeneration practical (fin and heart): Ken Poss (Loeb 160)
19:30 – 21:00 Research Lectures and Discussion: Mary Mullins and Ken Poss (Loeb G70)
21:00 – 22:00 Lab: Overnight time lapse set up with Andres Collazo & Jim Fadool

Tue 9 Aug
08:30 – 12:00 Pit Talk and Lab: in vitro fertilization, sperm freezing, fin clipping: Cecilia Moens (Loeb 160)
13:00 – 14:00 Lecture: Introduction to Microscopy: Andres Collazo (Loeb 160)
14:00 – 16:30 Hands-on intro. to microscopes & imaging: Collazo, Raible, Fadool, Amacher, Houart. (Loeb 160)
16:30 – 17:20 Review Lecture: Developmental Genetics: Mary Mullins (Starr 209)
17:30 – 18:15 Needle pulling demo: Adair Osterle (Loeb 160)
19:30 – 21:00 Research Lectures & Discussion: Alex Schier and Lila Solnica-Krezel (Starr 209)
21:00 – 22:00 Lab: Overnight time lapse set up with Andres Collazo & Jim Fadool

Wed 10 Aug
08:30 – 11:30 Pit talk and lab: mRNA over-expression, morpholino and mutant rescue: Mary Mullins (Loeb 160)
13:00 – 14:30 Pit Talk: Functional genomics of non-coding elements, epigenomic and genomic resources: Ferenc Muller (Starr 209)
14:30 – 16:00 Bioinformatics Lab, using genomic resources – case studies: Ferenc Muller (Starr 209)
16:00 – 16:30 Wrap-up: In vitro fertilization (Loeb 160)
16:30 – 18:00 Round Table: Genome Editing in zebrafish Lila Solnica Krezel, Cecilia Moens (chair), Sharon Amacher, Erez Raz (Starr 209)
19:30 – 20:30 Chi-Bin Chien Lecture: Ferenc Muller (Speck auditorium in Rowe)
20:30 – 21:30 After lecture drinks and nibbles (Loeb 165)
21:30 - 22:30 Wrap-up mRNA rescue: Mary Mullins. (Loeb 160)

Thu 11 Aug
08:30 – 09:00 Pit Talk: TALENS, CRISPR injections (students can use their own): Mary Mullins (Loeb 160)
09:00 – 10:45 Lab: Morpholino/ TALENS, CRISPR injections: Mary Mullins/Erez (Loeb 160)
10:45 - 11:45 Round table discussion: Morpholino limitations Mullins, Houart, Moens, Amacher (Starr 209)
13:00 – 14:30 Pit Talk: Timelapse imaging of germ cell migration: Erez Raz (Loeb 160)
14:30 – 18:00 Lab: Imaging germ cell migration: Erez Raz (Loeb 160)
19:15 – 20:00 Research Lectures Sharon Amacher (Starr 209)
20:00 – 20:30 Imaging Discussion: Erez Raz (Starr 209)
20:30 – 22:30 Making movies and analysis of germ cell migration: Erez Raz (Starr 209)
22:30 – 23:00 Wrap-up morpholino/ TALENS, CRISPR injections: Mary Mullins (Loeb 160)

Fri 12 Aug
08:30 – 09:00 Pit Talk: Immunostaining & in situ hybridization: Corinne Houart and Sharon Amacher (Loeb 160)
09:00 – 12:00 Lab: Mounting, analysis, and imaging of immunostained or in situ hybridized embryos: Corinne Houart and Sharon Amacher. (Loeb 160)
13:00 – 15:00 Lab: Continuation from morning (Loeb 160)
15:00 – 16:00 Lab: Making PPT presentations from immunostaining and in situ hybridization data (Loeb 160)
16:00 – 17:30 Wrap-up: student presentations with Corinne Houart and Sharon Amacher (Starr 209)
17:30 – 18:00 Check CRISPR/TALEN injected embryos for phenotypes (Loeb 160)
19:30 – 21:00 Research Lecture and Discussion: Rolf Karlstrom and Christine Beattie (Starr 209)
21:00 – 21:30 Wrap-up: imaging regenerating fins (Loeb 160)

Sat 13 Aug
09:00 – 11:00 Wrap-up: student presentations: Erez Raz (Loeb G70)
11:00 – 12:00 Round table discussion: Zebrafish as a disease model; Christine Beattie (Loeb G70)
13:00 – 13:30 Pit Talk: RGC labelling and local gene expression by focal heat shock: Rolf Karlstrom (Loeb 160)
13:30 – 17:30 Lab: retina, spinal cord, etc labelling + gene expression via focal heat shock: Karlstrom (Loeb 160)
17:30 – 18:00 Score the tyrosinase CRISPR embryos Amacher/Houart (Loeb 160)
19:00 – 23:30 Staff Party; Student Movie Night

Sun 14 Aug
Breakfast on your own.
13:00 – 16:00 Imaging of dye labelled RGCs and focal heat shocked embryos (Loeb 160)
16:30 – 18:00 Student Faculty soccer challenge (nearby soccer fields)
18:30 – 21:00 Course BBQ (courtyard between Loeb/Rowe/Starr)
21:00 – 21:45 Lab: Overnight time lapse set up with Andres Collazo/Jim Fadool

Mon 15 Aug
09:00 – 11:00 Round Table discussion: Aquatic Systems, Fish Facility Management: Corinne Houart, Erez Raz (with suppliers). (Loeb G70)
11:00 – 12:00 Round Table: Zebrafish husbandry, building a facility, breeding and raising fry (Loeb G70)
13:30 – 14:30 Pit Talk: Biophysics and quantitative biology: Scott Holley (Loeb 108)
14:30 – 17:00 Lab: Quantitative analysis of developmental biophysics Scott Holley (Loeb 108)
19:30 – 21:00 Research Lectures: Cecilia Moens & Erez Raz (Loeb G70)

Tue 16 Aug
09:00 – 11:00 Round Table Discussion: Transgenesis Dave Raible (Loeb G70)
11:00 – 12:00 Pit Talk: Chimeric Analysis: Cecilia Moens and Michael Granato (Loeb 160)
13:00 – 18:00 Lab: Chimeric analysis. Blastula transplants: Michael Granato, Jim Fadool, and Andres Collazo. Germ Cell transplants: Cecilia Moens. (Loeb 160)
19:30 – 21:00 Research Lectures and Discussion: Scott Holley and Corinne Houart (Loeb G70)
21:30 – 22:15 Lab: Overnight time lapse set up with Andres Collazo/Jim Fadool

Wed 17 Aug
09:00 – 11:00 Imaging of chimeras and wrap-up of chimeric analysis: Cecilia Moens, Jim Fadool, Michael Granato, and Andres Collazo (Loeb 160)
11:00 – 12:00 Pit Talk: Single cell transplants at late stages. Corinne Houart (Loeb 160)
13:00 – 18:00 Lab: Single cell transplants at late stages: Corinne Houart. Continue to take pictures of blastula/gastrula transplants on compound and confocal scopes. (Loeb 160)
19:30 – 21:00 Research Lecture and Discussion: Dave Raible and Debbie Yelon (Loeb G70)

Thu 18 Aug
09:00- 11:00 Wrap up: Transplants, fate mapping and lineage analysis: Corinne Houart (Loeb 160)
11:00 – 12:00 Round Table discussion: Responsible Conduct of Research: Image Manipulation: Erez Raz, Corinne Houart (Loeb G70)
13:00 – 14:00 group pit talk (Raible, Yelon, Farber)
14:00 – 18:00 Demonstrations: imaging subcellular structures: Dave Raible and Debbie Yelon; Lipid metabolism, visualisation and quantification of metabolism Steve Farber (Loeb 160)
19:30 – 21:00 Research Lectures and Discussion: Michael Granato, Elena Dreosti (Loeb G70)
Fri 19 Aug
09:00 – 9:30 Pit Talk: Motor, visual, and social behaviors: Michael Granato, Jim Fadool, Elena Dreosti (Loeb 160)
9:30 –12:30 Lab: Motor, visual and social behaviors: Michael Granato, and Jim Fadool, Elena Dreosti (Loeb 160)
13:30 – 16:00 Lab: continuation of Motor/visual/social behaviors: Granato, Fadool, Dreosti (Loeb 160)
16:00 – 17:00 Intro. to Atlas/Hands-on session: Corinne Houart (Loeb G70)
19:30 – 21:00 Research Lecture and Discussion: Jim Fadool and Steve Farber (Loeb G70)

Sat 20 Aug
09:00 –12:00 Regeneration results and imaging. (Loeb 160)
13:00 – 16:00 Five minutes student presentations of their favourite piece of data (Loeb G70)
17:00 – 18:00 Course Wrap-up: Amacher, Houart, Raz discussion with the students (Loeb G70)
18:00 – 23:00 Course Dinner sponsored by Pentair Aquatic Ecosystems and Techniplast (Swope Patio/banquet room) and Prizes

Meal times at Swope: Breakfast: 07:00-08:30 Lunch: 11:30-13:00 Dinner: 17:00-19:00