



NCBS Animal Care and Resource Center Second Mouse Cryobiology / IVF workshop

August 15th – 21st 2018

National Center for Biological Sciences (NCBS), Tata Institute of Fundamental Research,
GKVK PO, Bellary Road, Bengaluru 560065, INDIA

COURSE SCHEDULE

Day 1 - Wednesday, August 15th

Travel – Arrival – Check In

Course Faculty @ on campus NCBS Guest House; Participants @ NCBS Guest House or
Mandara Hostel-Yelahanka

Day 2 - Thursday, August 16th

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|-----------------|--|
| 7.30 or 8.30 am | Shuttle from Mandara Hostel to NCBS Campus (25 minute ride) |
| 8.15 - 9.15 am | Breakfast at NCBS Canteen |
| 9.15 - 9.30 am | Registration - (venue: SAFEDA – terrace) |
| 9.30 - 9.45 am | Course overview / Introductions (venue: SAFEDA – lecture Hall)
<i>Lily, NCBS-</i> |
| 9.45 - 10.30 am | Cryo-biology & assisted reproductive technologies (ARTs)
(venue: SAFEDA – lecture Hall) course - <i>Robert Taft, JAX</i> |
| 10.30 - 11 am | Tea/Coffee Break - (venue: SAFEDA – terrace) |
| 11 - 12.45 am | Mouse Sperm Cryopreservation and Recovery: main protocols and variants – Reproductive Anatomy and Biology
(venue: SAFEDA – lecture Hall) - courses - <i>Robert Taft, JAX</i> |
| 12.45 - 1.45 pm | Lunch at Campus Canteen |

- 1.45 - 4 pm **Mouse Sperm cryopreservation** (EMMA-NCBS & JAX protocols) demonstrations and lab practicals - (*Lily, Barbara Stone, & MGEF staff*)
(+ preparation of IVF media and dishes with staff) - (venue: MGEF Lab)
- 4 - 4.30 pm Tea/Coffee Break - (venue: SAFEDA – terrace or Main Lawn)
- 4.30 - 5.45 pm **Embryo Transfer Pipette design and embryo handling** - pulling - forging / loading embryos, media and air bubble
mini lecture and lab practical - *Lily, MGEF staff*
(venue: MGEF offices & Lab)
- 5.45 - 6 pm Daily wrap up / discussion - (venue: MGEF offices)
- 7.30 - 8.30 pm Diner at Campus Canteen
- 8.30 pm Return Shuttle to Mandara Hostel

Day 3 - Friday, August 17th

IVF day

- 7.30 am Shuttle from Mandara Hostel to NCBS Campus
- 8.00 - 8.30 am Early breakfast at Campus Canteen
- 8.30 - 9.15 am **Introduction to In Vitro Fertilisation (IVF)** -
(venue: SAFEDA – lecture Hall) - course - *Robert Taft, JAX & Lily*
- 9.15 - 11.45 am **Sperm Cryorecovery & IVF lab practicals** - (venue: MGEF Lab)
(EMMA/CARD-NCBS & JAX protocols)
(Lily, Barbara Stone, & MGEF staff)
- 10 am Tea/Coffee Break - (venue: SAFEDA – terrace)
- 11.45 - 12.45 pm **IVF - implementation and troubleshooting** – discussion with *course faculty* on equipment / reagent details / course on assessment of sperm & oocyte /embryo quality
(venue: SAFEDA – lecture Hall)
- 12.45 - 2 pm Lunch at Campus Canteen
- 2 - 2.15 pm **Group Photo – SLC colonnade stairway**
- 2.15 - 3.30 pm **IVF lab practical - continued** - (venue: MGEF Lab)
washes and o/n incubation (*Lily, Barbara, & MGEF staff*)
- 3.30 - 4 pm Tea/Coffee Break - (venue: SAFEDA – terrace)

- 4 - 5 pm **Cryo-repositories / Data management** / Quality Control / policies-
(venue: SAFEDA – lecture Hall) lecture & discussions - **Lily**
- 5 - 5.45 pm **International Strain Nomenclature Standards**
& record keeping and strain sharing implications
Lecture - **Robert Taft, JAX** (venue: SAFEDA – lecture Hall)
- 5.45 pm Daily wrap up / discussion - (venue: SAFEDA – lecture Hall)
- 7.30 - 8.30 pm Diner at Campus Canteen
- 8.30 pm Shuttle (workshop specific transportation) to Mandara Hostel

Day 4 - Saturday, August 18th

- 7.30 am Shuttle from Mandara Hostel to NCBS Campus
- 8.15 - 8.45 am Breakfast at NCBS Canteen
- 8.45 - 9.30 am **Introduction to embryo cryobiology and discussions on
different protocols**
two step freezing vs. vitrification / straws vs. vials
course/discussion **Lily (+ Barbara , Martin and Rob ?)**
(venue: SAFEDA – lecture Hall)
- 9.30- 12 pm **IVF assessment & Embryo vitrification** in straws & cryotubes
lab practical-
+ Demo on Ovary vitrification.
(with Lily, Barbara, & MGEF staff) - (venue: MGEF Lab)
- 10.30 am Tea/Coffee Break - (venue: SAFEDA – terrace)
- 12 - 12.45 pm **Embryo cryopreservation - discussion and troubleshooting**
different types of slow rate freezer equipment / different reagents
shelf life & storage conditions...
Q&A and discussions with **course faculty**
(venue: SAFEDA – lecture Hall)
- 12.45 - 2 pm Lunch at Campus Canteen
- 2.15 - 3.15 pm **Lily** lecture - **Introduction to Mouse Genetics and latest
trends in Mouse genome Engineering (venue: MALGOVA)**
- 3.15 - 4.15 pm general open discussions on Mouse Transgenesis and production
and sharing of mouse stocks in India **(venue: MALGOVA)**
- 3.15 - 4.15 pm tea/coffee break (Venue: main Lawn)

(+ Course Faculty Internal meeting)

- 4.15 - 4.45 pm **germplasm transportation** - cryo, frozen refrigerated and room temperature transportation of mouse germplasm and organs course - [Martin Fray \(Skype?\)](#) & [Lily](#)
(venue: SAFEDA – lecture Hall)
- 4.45- 5.45 pm **germplasm transportation** demos & lab Practicals
[Lily and MGEF Staff](#) , - (venue: MGEF Lab)

Day 5 - Sunday, August 19th

- 7.30 am Shuttle from Mandara Hostel to NCBS Campus
- 8.15 - 8.45 am Breakfast at NCBS Canteen
- 8.45 - 9.45 am **mouse Embryo transfer troubleshooting** and considerations when working in aseptic conditions & SPF environment open discussions and Q&A with [course Faculty](#) - [Lily, Rob, Barbara](#) (venue: MGEF offices)
- 9.45 - 10.15 am Non Surgical Embryo Transfer (NSET)
lecture - [Barbara Stone, Paratechs](#) - (venue: MGEF offices)
- 10.15 am Tea/Coffee Break – (Venue: main Lawn)
- 10.45 - 1 pm **Oviduct and uterine / Surgical & non Surgical embryo transfers** demos & lab practicals - (venue: MGEF Lab)
[\(Lily, Barbara, & MGEF staff\)](#)
- 1 - 2 pm Lunch at Campus Canteen
- 2 - 4 pm **Embryo Transfers (surgical and non surgical)**
& Ovarian transplantation demonstration
lab practical continued - (venue: MGEF Lab)
[\(Lily, Barbara, & MGEF staff\)](#)
- 4 - 4.30 pm Tea/Coffee Break– (Venue: main Lawn)
- 4.30 - 6 pm **Crispr/Cas – sgRNA guides efficiency tests- Blasto PCR and T7 endo assays.** (course and practicals) [Lily, & MGEF staff.](#)
(venue: MGEF Offices & MGEF Lab)

6 pm Daily wrap up (venue: MGEF offices)

Sunday August 19th - COURSE DINER – outside campus (course faculty + participants + ACRC support staff + IAUC members) - (workshop specific transportation)

Day 6 - Monday, August 20th

7.30 am Workshop Shuttle from Mandara Hostel to NCBS Campus

8.15 - 8.45 am Breakfast at NCBS Canteen

8.45 -10 am **Genetic monitoring & genetic drift** in breeding facilities- backcrossing or reviving cryo stocks and other strategies to maintain mouse strain genetic quality. Importance and implications of the strain genetic background
lecture **Robert Taft, JAX – (& Lily)** (venue: SAFEDA – lecture Hall)

10 - 10.30 am Tea/Coffee Break (venue: SAFEDA – Terrace)

10.30 - 10.45 am **Colony management, record keeping and health monitoring at the NCBS Animal Care and Resource Center**
lecture **Lily & Mohan, NCBS** - (venue: SAFEDA – lecture Hall)

10.45 - 11.45 am Facility Tour – venue: ACRC Vivarium 2.

11.45 – 12.15 pm Sponsor presentation?

12.15 - 12.45 pm **presenting the ISTT (International Society for Transgenic Technologies)-** (venue: SAFEDA – lecture Hall)
Lily, NCBS

12.45 – 1 pm **Course wrap Up** - (venue: SAFEDA – lecture Hall)

1pm - 2 pm Lunch at Campus Canteen

2pm-4pm Feedback forms, Course evaluations & closing ceremony and certificate distribution.

Afternoon Buggies or evening Shuttle back to Mandara Hostel

END of COURSE

Day 7 - Tuesday, August 21st

Departures / Travel