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, GKV 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

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) - Lily, NCBS
9.45 - 10.30 am Cryo-biology & assisted reproductive technologies (ARTs) (venue: SAFEDA – lecture Hall) course - Robert Taft, JAX
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 - Robert Taft, JAX
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 - 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

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**Day 3 - Friday, August 17**

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**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)

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NCBS Mouse Cryobiology / IVF workshop – schedule
https://www.ncbs.res.in/research-facilities/acrc
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

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**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)
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