



# HSNC UNIVERSITY, MUMBAI

## Kishinchand Chellaram College

### Department of Life Sciences

Under the aegis of DBT Star Status

Presents



## ‘A VIRTUAL LAB VISIT TO EART’

The Department of Life Sciences, K.C. College, HSNC University under the aegis of DBT Star Status, organized an informative and interesting ‘**Virtual Lab Visit to EART (Embryology Academy for Research and Training)**’ on 7<sup>th</sup> and 8<sup>th</sup> September, 2021 on the Zoom platform. The session was conducted by our esteemed resource person Dr. Kersi Avari, practicing Embryologist and Founder Director of Embryology Academy for Research and Training, Mumbai, India. The aim of this virtual visit was to make the students learn about the various equipments and techniques used in the field of Embryology and ART (Assisted Reproductive Technology). Dr. Avari thoroughly fulfilled the objective of this session with his phenomenal expertise in this discipline and elucidative explanations.

### DAY 1 of Virtual Lab Visit to EART

On 7th September, 2021, about 79 participants from the Department of Life Sciences attended the session, which included the second-year and third-year undergraduate students along with the faculty members of the department. The virtual visit session was inaugurated by Dr. Tejashree Shanbhag, Vice Principal, K.C. College who warmly welcomed Dr. Kersi Avari and the participants attending the session. Ma’am assured the students that the session would be a magnificent learning experience for them as the insights from Dr. Avari’s lecture are always remarkable and are known to stimulate an interest in students to pursue their career in the field of Embryology and ART (Assisted Reproductive Technology). Dr. Kersi Avari commenced the session by briefly explaining the students how the Assisted Reproductive Technology, which started from 1992 got evolved with the increase in innovations and new technologies and sir also went on to explain the reason behind the increasing number of couples opting for ART in the recent times. Sir gave a general idea to the students that to pursue a career in Embryology, one has to have a basic knowledge of many subjects like zoology, microbiology, biotechnology, etc. along with the master's degree as embryology is an amalgamation of many subjects.

Dr. Avari then took the participants to the virtual visit of EART laboratory through his meticulous and detailed videos. Furthermore, sir informed the students that EART laboratory is intricately constructed with utmost care and safety and is divided into various compartments like counseling

room, utility room, recovery room, etc. to provide the Embryologists with ease in working and to avoid any kind of toxicity, water seepage and leakage, etc. Talking about utility and air handling, Dr. Avari explained the importance of maintaining a proper positive pressure and CO<sub>2</sub> saturation level in a laboratory through air exchange. Sir then briefly introduced the students to the Andrology compartment and explained the significance of various equipments used in this section. Sir elaborated the working of laminar air flow and discussed how HEPA filters present in them work with high efficiency to create a sterile and particulate free environment. Sir provided the detailed information of inverted microscope for judging the morphology and functionality of male gametes and sir also advised the students to be careful while cleaning it's lenses with proper chemicals. Furthermore, sir briefly explained the working and importance of centrifuge where the sperm cells gets differentiated from the rest of the fluid. Lastly, sir explained the various aspects of In Vitro Fertilization (IVF) in a very concise and elucidative manner. The lecture was followed by a question and answer session where sir patiently answered all the questions in detail and cleared all the doubts of the participants. Dr. Sagarika Damle, Head of Department of Life Sciences, K.C. College gave the concluding remarks and expressed her gratitude to Dr. Avari for enlightening the students with his extensive expertise. The webinar was concluded with a heartfelt vote of thanks by a student volunteer.

## DAY 2 of Virtual Lab Visit to EART

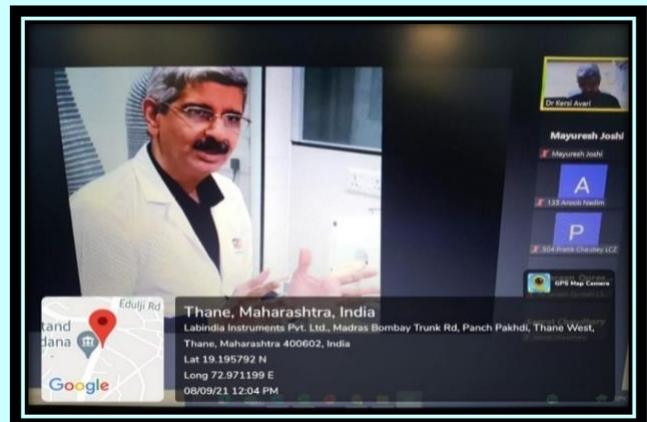
On 8<sup>th</sup> September, 2021, about 63 participants from the Department of Life Sciences attended the second day of virtual visit to EART, which included the second-year and third-year undergraduate students along with the faculty members of the department. Dr. Kersi Avari commenced the second session by briefly explaining the students the process of embryo transfer and it's various requirements such as IUI (Intra Uterine Insemination) sperm catheter. Sir elaborated the different types of catheters and the process of embryo catheter loading technique. Moving on to Cryopreservation sir explained that its main aim is fertility preservation and mentioned that earlier cryopreservation was done primarily prior to chemotherapy. However with time the application of cryobiology has increased due to new innovations and techniques. Sir also stated that the ultimate aim of cryobiology is the retention of the structural and functional integrity of the frozen gametes thereby preserving fertility but discussed that there is possibility of disturbing the sensitive chromatin network during cryobiology. Dr. Avari then provided detailed information about cryobiology which involves appropriate recruitment, processing, storage, thawing, subsequent delivery of gametes, etc. Furthermore, sir informed the students that the gametes are frozen with cryoprotectants to prevent the cytostructure of gametes from shattering. In the process of explaining cryopreservation of gametes, Dr. Avari also explained the significance of liquid nitrogen and Cryocan that is employed in cryopreservation of gametes and possesses a vacuum insulation.

Dr. Avari then introduced the students to Ovum Pickup Simulator that simulates one of the most important process of OCC pickup in ART where the oocytes are retrieved from follicle rich ovaries. Sir then introduced the participants to 'Box Incubator' where the complete process of ART takes place and also explained the importance of backup CO<sub>2</sub> cylinder near the incubator and informed the students that it is very necessary for an Embryologist to have a sound knowledge of setting up the backup CO<sub>2</sub> cylinder during emergency and how the leakage of CO<sub>2</sub> plays an

important role in decreasing the shelf life of cylinders. Sir also mentioned that as incubator is an exothermic equipment, it works best in cooler environment. Dr. Avari then introduced the students to Intra Cytoplasmic Sperm Injection (ICSI) machine where a single sperm is injected into a particular egg to assist fertilization through micro-manipulation. Lastly, sir introduced the students to various components of ICSI machine like inverted microscope, pneumatic and hydraulic microinjectors that hold oocyte and inject sperm into the oocyte respectively. This was followed by a live demonstration of ICSI. Subsequently, the question and answer session was carried out where sir again patiently answered all the questions in detail and cleared all the doubts of the participants. Dr. Suvarna Sharma, Assistant Professor, Department of Life Sciences, K.C. College gave the concluding remarks and expressed her gratitude to Dr. Avari for enlightening the students with his noteworthy knowledge.

### **Feedback:-**

**The extensive knowledge and experience of the illustrious resource person not only stimulated student's interest in the sphere of Embryology but also helped them understand the important aspects of EART laboratory. The speaker with his remarkable knowledge very concisely explained all the equipments present in the EART laboratory in an extremely elucidative manner. All the participants felt that communication with speaker was at ease and he patiently responded all the questions and clarified the doubts of the students. The virtual visit as a whole was splendid as the speaker was an excellent orienteer and had keen knowledge of his work. The session was well organized and the information was effectively delivered and also the time allotted was sufficient. Many participants conveyed their gratitude along with the hope and wished to attend more such empirical and elaborate session on this subject. Altogether, the virtual lab visit to EART was a delightful investment of time and it was a great success.**



**Dr. Avari providing an interesting  
Virtual Lab Visit to EART**



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