

Report on practical training program at the Institute of Genetics- October 2016

The students of BSc Life Sciences III year participated in the practical training program on **Diagnosis & Management of Genetic Diseases** from 13-10-16 to 29-10-16 at the Institute of Genetics & Hospital for Genetic Diseases, Hyderabad.

On the first day, inauguration program was conducted where the students were introduced to the Vision and Mission of the Premier Institute. The participants were given a brief idea about the different departments, their tasks & challenges.

The participants were grouped into four different teams & sent to the following departments on rotation:

Department 1: Cell Biology: In this dept, students learned about Karyotyping, FISH (Fluorescence In situ Hybridization) and SKY (Spectral Karyotyping) techniques. They performed Karyotyping and FISH with their own blood samples in which they did slide preparation & chromosomal analysis by screening. There were practice sessions of matching homologous chromosome pairs & numbering of chromosomes on Karyotype paper, screening for various Genetic disorders such as Turner's, Down's, Klinefelter's syndrome, etc.

Department 2: Environmental Toxicology: In this dept, students conducted cytogenetic studies to identify DNA damage due to environmental stresses, such as chromosomal aberrations, Micronucleus assay, sister chromatid exchanges & Comet assay. Students performed Comet assay with their own blood sample and analyzed DNA damage by number of DNA breaks & length of the DNA tail.

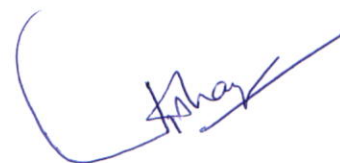
Department 3: Clinical Genetics: This dept involves diagnosis, counseling & treatment of individuals & families with Genetic disorders. The students had a slide show presentation on the diagnostic technique of Ultrasonography. The students were also involved in Genetic Counseling sessions to families affected with Genetic disorders.

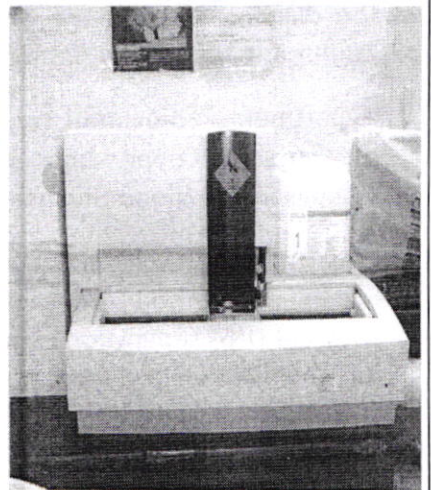
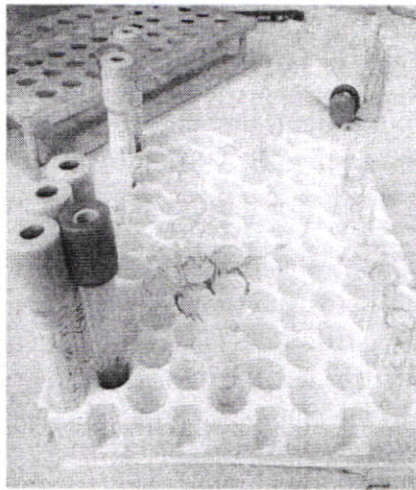
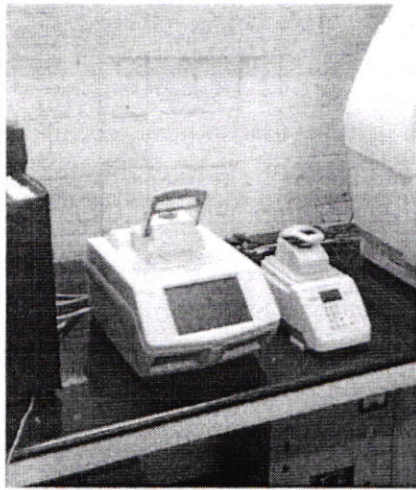
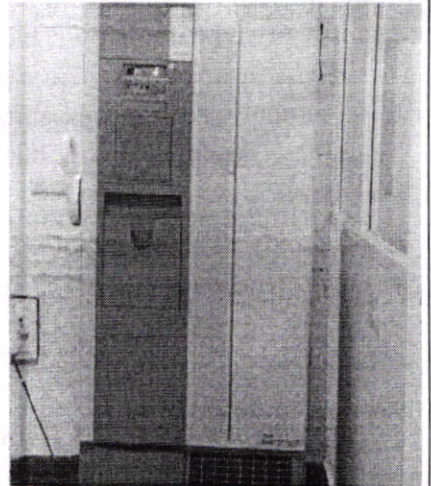
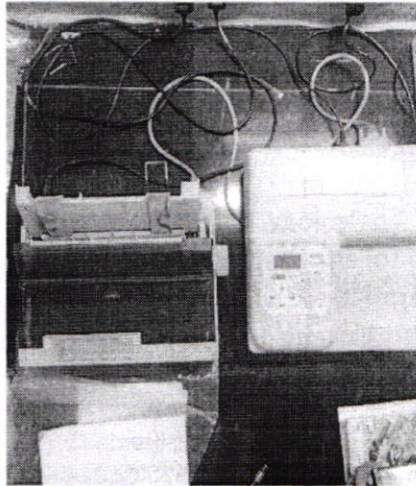
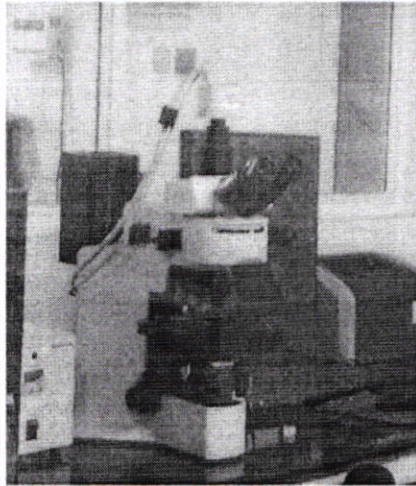
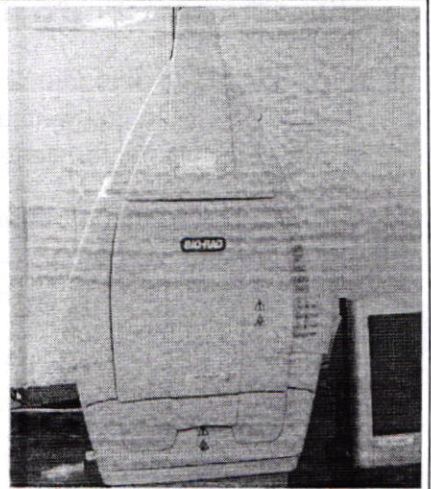
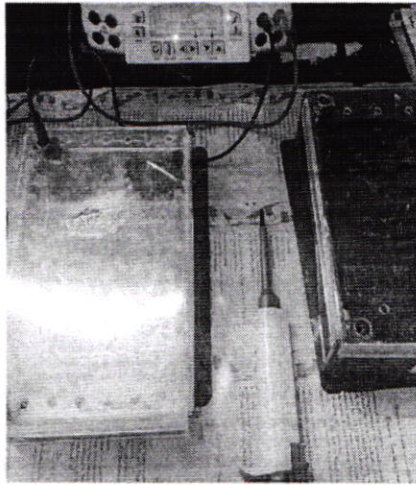
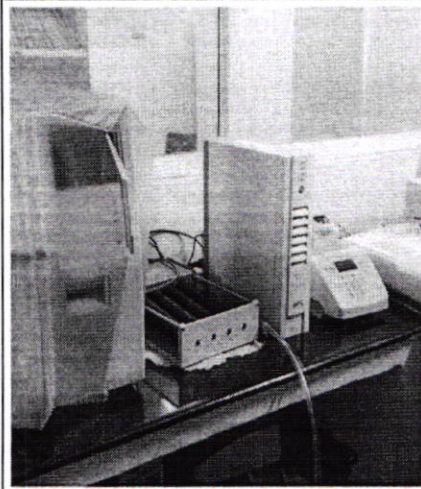
Department 4: Biochemistry: In this dept, the participants learned some biochemical tests like estimation of Copper from urine Sample (for diagnosis of Wilson's disease), lipid profile from serum sample, blood Glucose levels and also Neonatal screening for genetic disorders.

Department 5: Molecular Biology: In this dept, students performed DNA isolation by Sucrose and Phenol method & they used Sucrose method to isolate DNA using their own blood samples. They did DNA separation using Agarose Gel Electrophoresis. The students also carried out PCR for amplification of desired sequences of DNA. They were briefed about the working & principle of HPLC which is used to estimate the amount of fetal hemoglobin.

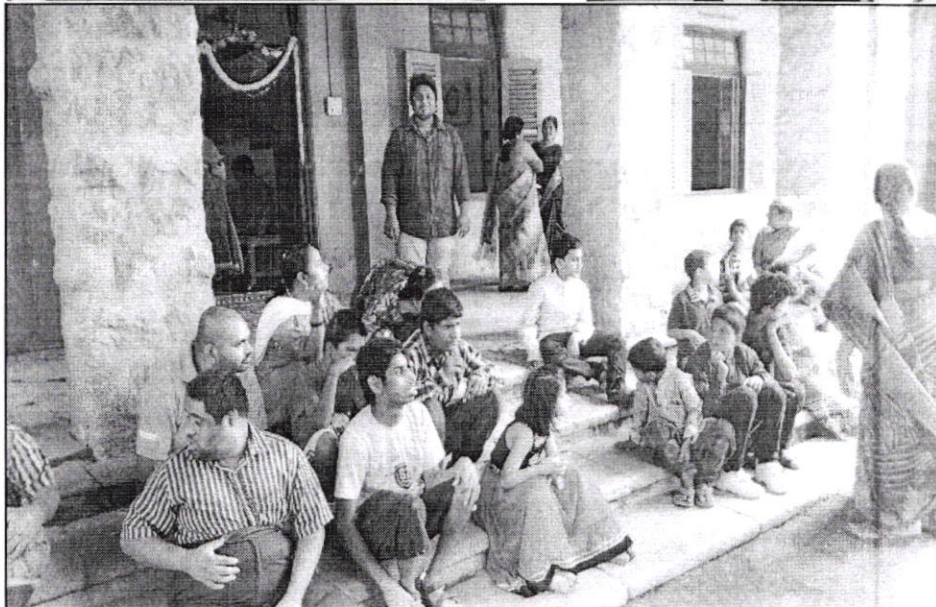
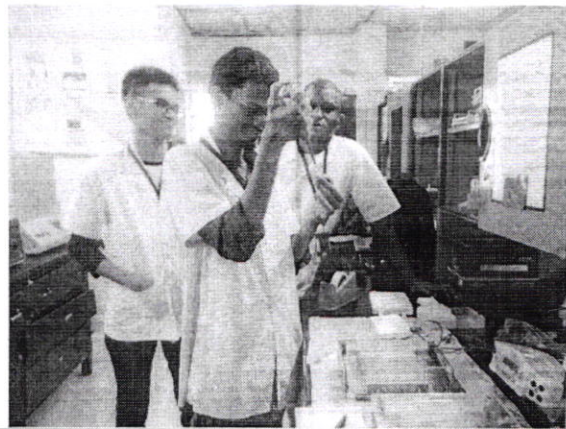
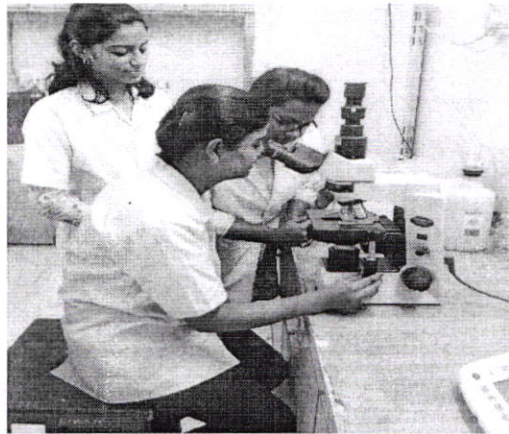
The participants also had an opportunity to interact with students at the Special school for the differently abled children, which is attached to the IOG.

At the end of the training program, the students had a special session on **Career Counseling** by Prof. N.Pratibha, Director of IOG. The students were awarded participation certificates by Prof. N.Pratibha. It was a very enlightening & motivating program for the students.





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