

Report on Internship Program- IOG 2019

A four week training programme was conducted for the second Year Undergraduate students at Institute of Genetics and Hospital for Genetic Diseases, Begumpet from 22nd April 2019 to 18th May 2019. A group of 12 students attended the training programme. The students were grouped into four teams with each team comprising of 3 students. They were allotted different labs for a week. Each team was then allotted the next labs in turns thereafter. There were five divisions namely **Clinical Genetics, Clinical Biochemistry, Toxicology, Molecular Biology and Cytogenetics.**

In the **Clinical Biochemistry** division, the students were briefed on the importance of biochemical investigations on the role of their significance and relevance to Genetic Disease. **Thyroid profiling, Lipid Profiling, Glucose profiling, and Liver Profiling** were done by the students on the samples provided by the patients visiting the Hospital. After performing the experiments the students were also trained on the analysis of the results obtained. The students also could relate the results to the clinical significance in terms of predisposition to genetic disorders.

As part of the new born screening tests, the **Wilson test Profiling**, comprising of estimating the levels of **Serum Ceruloplasmin, Serum Copper and Urine copper.** Students were instructed on the usage of **Automated HPLC** for the detection of Autosomal recessive disorders like **Sickel cell anemia and Thalessemia.**

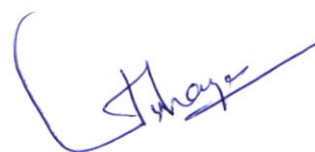
In the **Molecular Biology Division**, students performed **Polyacrylamide and Agarose Gel electrophoresis.** They also had the opportunity to Visualize the **Thermocycler, Gel documentation Unit.** They learnt the different methods of DNA extraction.

At the **Clinical Genetics Division**, the students were taught the concept of **Probability, Risk Calculation, Significance of pedigrees** and the different **Prenatal Diagnostic techniques** for the purpose of **Genetic Counselling** to the patients who had a positive family history.

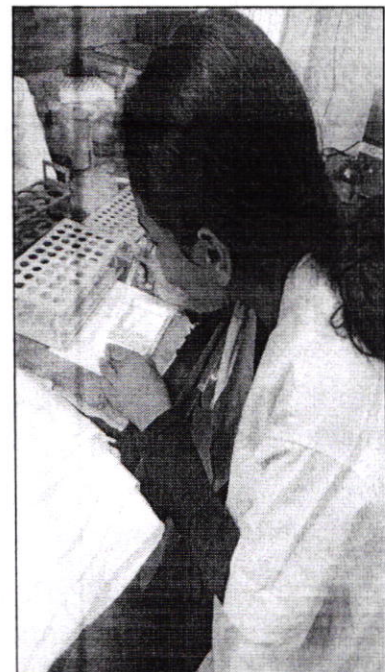
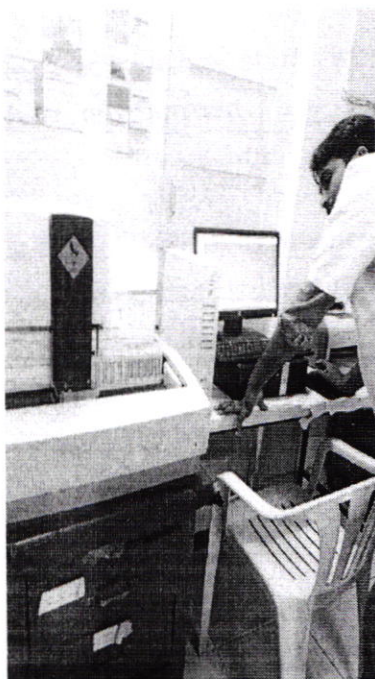
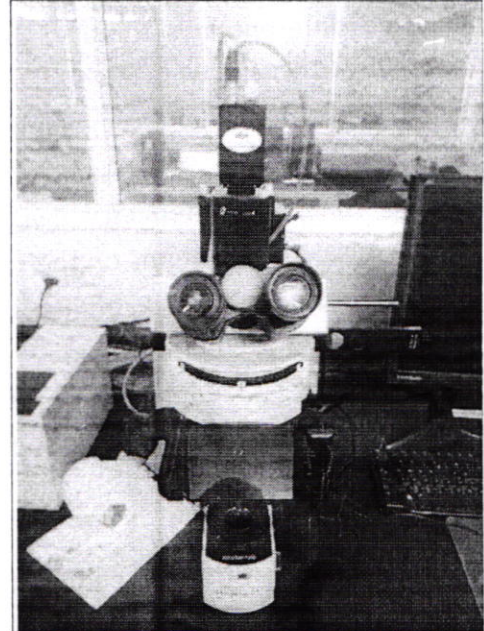
In the **Toxicology Division**, the students performed **Comet Assay** experiment, which is a tool to measure the amount of mutagenicity due to the exposure to different chemical mutagens.

In **Cytogenetics Division**, the students had the liberty to use the **Laminar air Flow chamber** for culturing the Lymphocytes. These cultures were further used for the purpose **Karyotyping** which is an essential tool in the detection of **Chromosomal abnormalities.** The students were delighted to See the **Fluorescent In situ Hybridization** images of human chromosomes.

The students had the opportunity to listen to a lecture on "DNA Microarrays" which was delivered by a Research Scientist at Asian Institute of Gastroenterology, **Dr Ravikanth.**



At the end of the training in each of the division, they were analysed through interaction with the doctors, scholars and the faculty regularly. The training program was very informative and knowledge gaining. The students found the internship program apt for their curriculum.



Alhaya