

### **An enlightening visit to the Institute of Genomics and Integrated Biology (CSIR)**

Physical Science students of final year, Shyam Lal College visited the Institute of Genomics and Integrative Biology (IGIB), a premier Institute of the Council of Scientific and Industrial Research (CSIR) on 27th September 2018. The team of students was led by Dr. Monika Goyal, Dr. Ashu Gupta and Mr. Balram Kindra accompanied by various faculties of SLC under the exemplary guidance of the Principal, Dr, Rabi Narayan Kar. IGIB engages in research of national importance in the areas of genomics, molecular medicine, bioinformatics, proteomics and environmental biotechnology. At the onset, students were shown short interesting clips in the auditorium. They were explained several concepts with simplicity and attractive illustrations, stretching from the process of cell making antibodies to the RNA world hypothesis!

The students were divided into three batches and shown around the institute by tour guides. Firstly, students were taken to lab where diversification of various cells were displayed with red fluorescent protein and green fluorescent protein with statistical analysis. This was a fun filled and interactive session. After that they visited the area where study of human genome sequence was explained. It gave a deep insight about the genome sequencing. Another eye catching exhibit was the mass spectrometer where particles were ionized for identification. The most interesting room was 'Edison Lab'. For this, all were led into a completely dark room. It had confocal microscope different from fluorescent microscope to see various organelle with different florescence. Students were shown the live movements of cell organelles. It was an enthralling session. Next, students visited the exhibit area where they were shown equipment's used by the scientist at IGIB for diagnosis of disease at genetic level. Lastly, at electron microscope lab they got exposure to the concept of microscopy. An electron microscope is one with high magnification and resolution, employing electron beams in place of light and using electron lenses. There were two types among these, the transmission electron microscope, TEM and the scanning electron microscope, SEM. While the former provides two dimensional images of a sample from the inside, the latter gives a three dimensional image, providing morphological and topological details. Students were introduced with the components and functioning of both the electron microscopes. They were also shown various images under the two microscopes: human cells and its various parts, yeast cells, embryo of zebra fish, a hair follicle and bundles of sarcomeres. It was extremely interesting to view such intricate structures of the microscopic world.

Students thoroughly enjoyed visiting this institute. This trip not only helped them in learning new facts but also boosted their enthusiasm towards science. After all, "The science of today is the technology of tomorrow." We are grateful to CSIR-IGIB for kind hospitality during our brief stay and for providing an invitation for an excellent scientific feast.









