

Letter to the Editor

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Dear Editor,

The McKusick short course is one of the most sought-after platforms for a peek into the exciting world of genetics. It is a two weeks long annual programme, conceived by Victor McKusick in 1953, hosted in Bar Harbor, USA. It covers and surveys extensively the basics of heredity, disease, genetic testing and genomics in model organisms along with diagnosis and treatment of inherited disorders and includes state-of-the-art lectures by some of the stalwarts in the field of genetics and genomics.

This year's 61st McKusick course was the first of its kind as it was an online course, providing an entirely different experience to the faculty and participants. This virtual event was presented through a combination of pre-recorded lectures and associated Q&A live panel discussions. Additionally, there were virtual workshops on a range of topics. Live sessions also included orations and memorial lectures by authorities in the field of biology, genetics and genomics.

The faculty was diverse in terms of disciplines and the students in terms of stages of career as well as work areas and interests. Being a virtual event, the attendee list was one of the largest they have ever had for a McKusick course. There was excitement in the air as many people, for whom travel to Bar Harbor may have only remained a dream, were able to experience the enriching and enthralling event. A multispecialty knowledge sharing fostered greater discussion.

The journey of this course started with a beautiful reminiscence of the history of genetics right from its foundation in the early 19th century and walked us through Darwinism to Mendelism, to the fly room of Morgan to chromosomes, leading to the foundation of molecular biology and finally to 20th- century genomics. Dr David Valle, Professor at Johns Hopkins University, described the transition of genetics with interesting anecdotes, like the one when Watson and Crick

were presenting their DNA model in a meeting after publishing their work in a single page in Nature on 25th April 1953; when Watson was asked by one of the students as to how they could convey their research in a single page, he chuckled and replied, "It helps to have something important to say".

Dr Greg Cox and Steve Munger gave an overview of the mouse models for human diseases. It was fascinating to hear the breeding experiments, generation of different strains for different purposes e.g. coisogenic strains used as disease models to ascertain the effect of a novel mutation and study genotype-phenotype correlation. It was exciting to learn how random crosses for 20 generations between genetically identical mice (mating between sibs) results in inbred strains (collaborative cross; CC mice) that are used for genetic mapping, study phenotypic variability and infectious diseases, such as COVID-19. The more diverse form mimicking human population is the DO (diversity outbred) mouse that is genetically unique, highly heterozygous and well suited for GWAS to map susceptibility loci for different diseases. These mouse strains are generated by crossing between the 8 main founder diverse (parent) strains to increase diversity in the DO mouse so that they can mimic human diversity. We were also given the chance to see these mice live at the Jackson laboratory through videos. Further, there was a live poster session followed by thrilling discussions.

Another interesting component of this event was the opportunity to interact individually with the faculty through "faculty hours". During this time, the professor would be available to chat with the participants one-on-one and discuss anything from genetics to wall colours. There were opportunities to enquire about research and career prospects in the field of genetics and genomics. Virtual posters submitted from all over

the world were also presented and discussed.

This was a unique virtual gathering of clinical geneticists, researchers, students and nurses in a single web portal sharing knowledge and updating with the developments in the field. The success of the event can be gauged by the fact that the number of participants exceeded 900, which is otherwise limited to less than 100 every other year. Distances did not matter in this novel

platform of the virtual learning experience, making it possible for many more to attend and opened doorways to affording, distant learning for millions of people for whom it may have been a challenge in the normal circumstances. It has indeed been a blessing in disguise. The learnings were immense and the experience enriching, especially within the nuances of new technology, discoveries and personalized medicine.