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20 Years After the First Human Genome Sequence Was Revealed, Take a Look Back

Akter Islam*

Department of Genomics, University of Dhaka, Dhaka, Bangladesh

***Corresponding author:** Email: islam@akter.org.bd

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Short Communication

Dr. Green shared four perspectives on the significance of genetic breakthroughs since the first draught sequences were revealed. "Our own success has made us victims." We can quickly and easily create human genome sequences. Getting a list of a person's variants is simple, but interpreting that list and knowing what to do therapeutically with each variant is not. We frequently have no idea what a list of gene variations signify." ClinGen, and NIH-funded site, "defines the clinical relevance of genes and variations for use in precision medicine and research," according to Dr. Green. "The importance of genetics in our environment has shifted." It was simply a group of geeky scientists like me trying to map the genome when I first got involved. We persuaded health-care professionals to join us under our tarpaulin. Then we moved on to genomic medicine, which included cancer, pharmacogenomics, prenatal testing, and identification of rare diseases. Now genetics is infiltrating the health-care system. Society is very much a part of genomics. Privacy, regulation, and money all come with the burden of making something relevant"[1].

"In our field, we have a persistent diversity problem, from participants in studies to our personnel." He cited the numerous genome-wide association studies (GWAS) that looked for connections between genomic sections and traits/illnesses. "In 2009, the vast majority of GWAS participants – 96 percent – were European, and by 2016, the figure had risen to 81 percent. "As genetic medicine becomes more widely used, we must address questions of health equity." "However, we risk worsening the problem because we already know that first access to cutting-edge genetic treatment is skewed toward people with the best health care, which is disproportionately people of European heritage," Dr. Green explained. The Human Pangenome Reference Center.o is assembling a database of genome sequences that reflects all human genomic diversity [2].

"There's more to genomics than that." Because of the technology we have for sequencing DNA, genomic medicine is at a phenomenal growth phase. However, health and environmental monitoring technologies are also vital, and we can develop other 'omic data to pair with genomic data using them." Dr. Green suggested that we think of genomic medicine in a broader sense and use the term "decision medicine" to describe a more precise accounting of individual variability. "How genomic risk influences physiology, which also reflects lifestyle and environment, is what precision medicine is all about. We have a significant potential to increase our understanding of human health and disease via the lens of individual genetic variants." "The UK Biobank is much ahead of us," he said, referring to the NIH's All of Us cohort of a million volunteers. Dr. Green and a brilliant team issued "10 Bold Predictions for Human Genomics by 2030" in October 2020, on the eve of the pandemic. They are as follows [3].

- In research facilities, sequencing and analysing whole human genomes will become commonplace.
- Understanding the role of each gene
- Predicting health and disease by taking into account environmental influences on genomes
- In study, social constructs such as race will no longer be used.
- There will be more genomics projects in science competitions.
- Genomic testing will become as prevalent as blood tests in medicine.
- It will be simple to determine whether a person's gene variants are clinically significant. 8. Smartphones will display whole genome sequences that will be revealed two months later.
- Advances will benefit everyone. 10. Genomics discovery and technology will treat more genetic illnesses [4].

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