

Future of Genomics: Presentations

In his testimony to a House of Representatives sub-committee on health, director of the National Human Genome Research Institute, Francis S. Collins, said that the future of genomics had three main focal points:

"Genomics to Biology: The human genome sequence provides foundational information that now will allow development of a comprehensive catalog of all of the genome's components, determination of the function of all human genes, and deciphering of how genes and proteins work together in pathways and networks.

Genomics to Health: Completion of the human genome sequence offers a unique opportunity to understand the role of genetic factors in health and disease, and to apply that understanding rapidly to prevention, diagnosis, and treatment. This opportunity will be realized through such genomics-based approaches as identification of genes and pathways and determining how they interact with environmental factors in health and disease, more precise prediction of disease susceptibility and drug response, early detection of illness, and development of entirely new therapeutic approaches.

Genomics to Society: Just as the HGP {human genome project} has spawned new areas of research in basic biology and in health, it has created new opportunities in exploring the ethical, legal, and social implications (ELSI) of such work. These include defining policy options regarding the use of genomic information in both medical and non-medical settings and analysis of the impact of genomics on such concepts as race, ethnicity, kinship, individual and group identity, health, disease, and "normality" for traits and behaviors."

All three of these areas have come a long way since 2003, and though there is still much progress to be made, significant advancements have already been identified in these three different areas.

Your goal with your partner is to identify 6 advancements or discoveries (or in the case of society, impacts or issues raised) and answer the following:

1. What is the discovery/advancement/issue/area of research identified?
2. Why is what you identified meaningful in regards to biology, health, or society? What impact is it having today? How does it fit into the three categories listed above?
3. How was what you identified discovered or addressed? Consider the following types of questions: What tools were used? Who did the work? Who supported their work? What prompted the issue being raised? How were policies formed?

Create a PowerPoint, 6 slides total, addressing these questions and be ready to present!

To read the full testimony go to the following website:

<http://www.genome.gov/11007447>

The Future of Genomics

Statement of Francis S. Collins, M.D., Ph.D.

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National Institutes of Health

Department of Health and Human Services

Testimony

Before the Subcommittee on Health

Committee on Energy and Commerce

United States House of Representatives

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