

# NHGRI publishes new vision for human genomics

October 28 2020

---



Credit: CC0 Public Domain

The National Human Genome Research Institute (NHGRI), part of the National Institutes of Health (NIH), this week published its "Strategic vision for improving human health at The Forefront of Genomics" in the

journal *Nature*. This vision describes the most compelling research priorities and opportunities in human genomics for the coming decade, signaling a new era in genomics for the Institute and the field.

"We crafted our new strategic vision at an important inflection point in human genomics," said Eric Green, M.D., Ph.D., NHGRI director.

"Genomics is now prevalent across the research landscape, and so NHGRI focused its strategic attention on the most cutting-edge aspects of the field. Our criteria for inclusion was that future advances must be widely beneficial and have the greatest impact on understanding genome biology and facilitating the implementation of genomic medicine."

The 2020 NHGRI Strategic Vision recognizes that responsible stewardship is a central aspect of being at (and pushing forward) the forefront of genomics. The vision identifies four focus areas:

- Guiding principles and values for human genomics.
- Sustaining and improving a robust foundation for genomics research.
- Breaking down barriers that impede progress in genomics.
- Compelling genomics research projects in biomedicine.

The first area represents a compilation of nine major principles and values that provide a guiding compass for human genomics. The field should pay significant attention to extending and reaffirming these tenets, which would help attend to the ethical, legal and social implications of genomic advances. Much like all other scientific disciplines, genomics is reckoning with systemic injustices and biases of the past.

The vision points to critical areas of data control, privacy and consent that the genomics community must improve in the coming decade. Some of the complex genomic issues discussed in the new vision relate to

genetic discrimination, genome editing, consent to participating in genomics research and genomic data security. It also stresses that people from across cultures and populations must be well-represented in both genomic studies and the genomics workforce.

In the last three areas, the vision describes more than 20 key challenges that reflect critical foundational elements for the genomics enterprise to thrive, barriers that, if broken, would benefit genomics more broadly and audacious research projects that warrant priority attention, respectively.

The field of genomics has blossomed in many ways since the completion of the international Human Genome Project more than 17 years ago, including the substantial use of genomic approaches and methods across all of biomedicine.

A number of significant catalysts have made genomics widely used in biomedical research. One was the greater than one million-fold reduction in the cost of genome sequencing, enabling genomics to become mainstream in areas like cancer research, microbiology and the study of rare and common genetic diseases, among others. Most recently, effective uses of genomic information in clinical care have allowed genomic medicine to progress from hypothetical to reality.

Since the end of the Human Genome Project, NHGRI has periodically conducted extensive strategic planning processes and then published strategic visions that describe the most exciting research opportunities in human genomics; the previous visions were published in [2003](#) and [2011](#), respectively.

Anticipating the expansive and dynamic landscape that the field of human genomics would face at the dawn of this decade, NHGRI launched a new round of strategic planning in early 2018.

"Our strategic engagement process for the past two-plus years was extremely effective at distilling the universe of opportunities in human genomics into a forward-looking blueprint of elements that reflect the forefront of genomics," Dr. Green said.

The resulting broad [community engagement](#) involved over 50 events, including dedicated workshops, town halls, sessions at professional meetings and social media discussions. NHGRI senior staff developed the new strategic vision using the input from thousands of people, who together represented highly varied backgrounds, career stages and disciplines.

The strategic vision culminates with 10 bold predictions for [human genomics](#) by 2030. Crafted to be both inspirational and aspirational, the predictions are intended to provoke thoughtful discussions (and even debate) about what might be possible in the coming decade.

The 2020 NHGRI Strategic Vision is available online at [genome.gov/2020SV](https://www.genome.gov/2020SV).

**More information:** Strategic vision for improving human health at The Forefront of Genomics, *Nature* (2020). [DOI: 10.1038/s41586-020-2817-4](https://doi.org/10.1038/s41586-020-2817-4), [www.nature.com/articles/s41586-020-2817-4](https://www.nature.com/articles/s41586-020-2817-4)

Provided by NIH/National Human Genome Research Institute

Citation: NHGRI publishes new vision for human genomics (2020, October 28) retrieved 24 April 2024 from <https://medicalxpress.com/news/2020-10-nhgri-publishes-vision-human-genomics.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.