### NHGRI Strategic Planning Town Hall

Summary of Prior Meetings & Strategic Planning Events broken into five focus areas and multiple themes within each focus area.







### Five Focus Areas for NHGRI Strategic Planning

- 1. Basic Genomics & Genomic Technologies
- 2. Genomics of Human Health & Disease
- 3. Genomics in Medicine & Health
- 4. Genomics of Data Science
- 5. Society, Education, & Engagement





### **Genomics of Data Science: Themes**



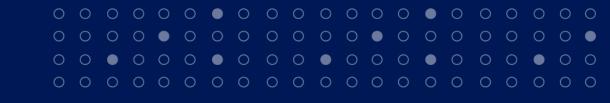
#### Focus of Data Science Townhalls

- The next slide summarizes general themes that will be the focus of our townhalls.
- The following slides show a picture of other areas that provide relevant information on the broader goal of NHGRI strategic planning efforts.



- 1. Develop computational and statistical methods that facilitate continued advances in genomics
- 2. Provide leadership for developing and refining genomic data sharing guidelines, policies and best practices
- 3. Facilitate storing, sharing, and computing on large-scale genomic data
- 4. Build sustainable genomic information resources
- 5. Integrate genomic data science into healthcare
- 6. Ensure that the next generation of genomicists are trained in data science





# **Basic Genomics and Genomic Technology: Themes**



- 1. Enable facile, routine generation of whole-genome sequences & transcriptomes and characterization of epigenomes & epitranscriptomes
- 2. Understand and interpret whole-genome sequences, transcriptomes, epitranscriptomes & epigenomes
- 3. Establish the role(s) of all genes and regulatory elements in pathways, networks, and phenotypes
- 4. Use evolutionary and comparative genomic data to markedly advance understanding of genome function
- 5. Enable facile, routine generation and use of synthetic nucleic acids in genomics research studies • •
- 6. Understand and leverage population structure and admixture to facilitate human genetics studies





### **Genomics of Human Health and Disease: Themes**



- 1. Establish the functional consequences of any genomic variant affecting human health and disease
- 2. Determine the genomic architecture of all human diseases and traits
- 3. Develop the methods and analyses to support use of non-sequence genomic data for characterizing human health and disease
- 4. Transform how we assemble sample sets for genomic studies of human disease
- 5. Commit to systematic inclusion of appropriate ancestral diversity into all large-scale genomic studies and analyses





### Genomics in Medicine & Health: Themes



- 1. Create systems to integrate genomics into everyday clinical and public health practice
- 2. Improve processes for routine, high value clinical genomic testing
- 3. Build knowledgebases for predictive genomic medicine
- 4. Develop and evaluate genomic prevention and therapeutic strategies
- 5. Ensure that genomics has maximum utility for all members of the public
- 6. Train healthcare providers to integrate genomics into the clinical workflow



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## Society, Education, & Engagement: Themes



- 1. Embrace equity and diversity as core values guiding genomics
- 2. Meet the expanding educational and workforce needs of educators, health professionals and researchers.
- 3. Develop and use genomics in accordance with community needs and perspectives
- 4. Understand whether and how clinical genomics works in specific social and disease contexts
- 5. Empower well-informed decisions about genomic data use, sharing, and protection, and data stewardship systems that honors those decisions while enabling open science
- 6. Investigate expanding uses of genomics and their influence on concepts of health, disease, identity, family and community



