H3Africa: The NIH Perspective and Context

Eric Green
Director, NHGRI

Inaugural H3Africa Meeting
October 2012
I. The National Institutes of Health (NIH)
II. The NIH Common Fund
III. NHGRI and the Genomics Landscape
IV. H3Africa @ NIH
I. The National Institutes of Health (NIH)

II. The NIH Common Fund

III. NHGRI and the Genomics Landscape

IV. H3Africa @ NIH
The NIH: Steward of Medical and Behavioral Research in the United States

“Science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability”
The Main NIH (Bethesda) Campus
75 Buildings on 322 acres
NIH Consists of 27 Institutes and Centers

NIH Director

NHLBI
NCAM
NCI
CIT
NEI
CC
NCATS
NIAMS
NIA
NIAAA
NLM
NIBIB
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IV. H3Africa @ NIH
NIH Consists of 27 Institutes and Centers

NIH Common Fund
We accelerate discovery
I. The National Institutes of Health (NIH)

II. The NIH Common Fund

III. NHGRI and the Genomics Landscape

IV. H3Africa @ NIH
October, 1990

Human Genome Project Begins
February, 2001

Draft Human Genome Sequence Published
April, 2003

Human Genome Project Ends
A vision for the future of genomics research

A blueprint for the genomic era.

Nature
2003

Charting a course for genomic medicine from base pairs to bedside

Perspective
Nature
2011

Base Pairs to Bedside

Helix to Health
Five Domains of Genomics Research

- Understanding the Structure of Genomes
- Understanding the Biology of Genomes
- Understanding the Biology of Disease
- Advancing the Science of Medicine
- Improving the Effectiveness of Healthcare
Genomic Accomplishments Across Domains

<table>
<thead>
<tr>
<th>Period</th>
<th>Domain</th>
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<tr>
<td>1990-2003</td>
<td>Understanding the Structure of Genomes</td>
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<td>2004-2010</td>
<td>Understanding the Biology of Genomes</td>
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<td>2011-2020</td>
<td>Understanding the Biology of Disease</td>
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<td>Beyond 2020</td>
<td>Advancing the Science of Medicine</td>
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<td>Improving the Effectiveness of Healthcare</td>
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1990-2003: Human Genome Project

2004-2010

2011-2020

Beyond 2020
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IV. H3Africa @ NIH
BUILDING SCIENCE IN AFRICA
Research for a brighter future
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NIH Common Fund Global Health Program

Medical Education Partnership Initiative (MEPI)  
Human Heredity and Health in Africa (H3Africa)
Welcome

The Human Heredity and Health in Africa (H3Africa) Initiative aims to facilitate a contemporary research approach to the study of genomics and environmental determinants of common diseases with the goal of improving the health of African populations. To accomplish this, the H3Africa Initiative aims to create and support the development of the necessary expertise among African scientists, and to establish networks of African investigators. It is envisaged that studies performed in the H3Africa Initiative will inform subsequent strategies to address more broadly health inequities in both communicable and non-communicable diseases eventually leading to health benefits in Africa.

- [Note from the NIH and Wellcome Trust](http://example.com) (April 13, 2011)
  About upcoming funding and calls for proposals

- [H3Africa Conference: Photos](http://example.com)

- [H3Africa Conference: Submit Your Feedback](http://example.com)

- [H3Africa Working Group White Paper](http://example.com)
Genomic Accomplishments Across Domains

- **1990-2003**
  - *Human Genome Project*

- **2004-2010**

- **2011-2020**

- **Beyond 2020**
National Institutes of Health - H3Africa Research Network

Alash'le Abimiku
Institute of Human Virology Nigeria, Nigeria
IHVN H3Africa Biorepository (I-HAB)

Dwomoa Adu and Akinlolu Ojo
University of Ghana Medical School & University of Michigan, Ghana & USA
H3Africa Kidney Disease Research Network

Dissou Affolabi
National Hospital for Tuberculosis and Pulmonary Diseases, Benin
Contribution of genetic variation to pharmacokinetic variability and toxicity in patients undergoing multi-drug tuberculosis treatment in Sub-Saharan Africa: RAFAgene project

Michele Ramsay
University of the Witwatersrand & NHLS, South Africa
Genomic and environmental risk factors for cardiometabolic disease in Africans

Akin Abayomi
Stellenbosch University, South Africa
Development of stem cell, blood & DNA bio repositories to facilitate studies on Health, Disease & Pharmacogenomics of African Populations

Nicola Mulder
University of Cape Town, South Africa
H3ABioNet: a sustainable African Bioinformatics Network for H3Africa
NIH Staff @ This Meeting: NHGRI

Eric Green, NIH Common Fund Global Health Program, Co-Chair
Jane Peterson, H3Africa Project Coordinator
Mark Guyer, H3Africa Co-Project Coordinator
Ebony Bookman, H3Africa Program Director
Margret Penno, H3Africa Biorepository Consultant
Karen Hofman, H3Africa Human Subjects Consultant
Chengetai Mahomva, H3Africa Program Analyst
NIH Staff @ This Meeting: Others

Common Fund
Leslie Derr, H3Africa and MEPI Program Director

National Institute on Drug Abuse
Louise Wideroff, H3Africa Biorepository Program Director

National Institute of Child Health & Human Development
Jean Flagg-Newton, H3Africa IEARD Program Director

National Institute of Diabetes and Digestive and Kidney Diseases
Marva Moxy-Mims, H3Africa Program Director
Wellcome Trust

NIH

Genomics/Genetics
New NHGRI Vision for Genomics Published

Charting a course for genomic medicine from base pairs to bedside
And away we go!
Questions?