### H3Africa Working Group – ICs

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H3Africa Working Group – Members

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Salina Waddy
NLM
Julia Royall
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Stacy Carrington-Lawrence
Robert Eisinger
Tanya Hoodbhoy
Global Health a National Priority

Opportunities for Research and NIH

NIH emphasis on global health research

The United States President’s Emergency Plan for AIDS Relief

May, 2009

President’s Global Health Initiative goes beyond current programs on HIV/AIDS, malaria, and TB to address health of women and children in developing nations

THE LANCET

2010

Three percent of the world’s health workers address 24% of the global burden of disease in Sub-Saharan Africa

The U.S. Commitment to Global Health: Recommendations for the New Administration

Institute of Medicine of the National Academies

2009

African populations have the greatest genetic diversity which contributes to disease risk

International HapMap Project

wellcome trust
Why Global Health?

- Scientific advances make an attack on infectious diseases more feasible than ever
  - RNAi
  - Small molecule screening
  - Genomics of pathogens & vectors
  - Vaccine development
- Opportunity to push beyond HIV/AIDS, malaria, TB to a long list of neglected tropical diseases (NTDs)
- Need for increased emphasis on chronic, non-communicable diseases of increasing importance in developing world
- Tapping into the passion of young medical researchers
- Compelling need to build capacity for research in all countries of the world
Common Fund
Global Health Initiatives

- Medical Education Partnership Initiative (MEPI)
- Human Heredity and Health in Africa (H3Africa)
“Recent advances in the capacity to link genetic variation to disease predisposition are providing important clues to disease pathogenesis and, over the coming decade, are expected to assume an important role in informing the prediction, diagnosis, monitoring, and treatment of many conditions...”

“...However, African researchers and populations are substantially underrepresented within this increasingly global research endeavor.”
NIH IC Investment in Global Health

Several global health initiatives → Few awards to African institutions

68 grant awards to African institutions in 2009-2010, plus some contracts

Most NIH awards in training and research infrastructure

Most NIH awards in communicable disease

10 awards in genetics, although in some this is a minor emphasis

We need to do more........
H3Africa: Goals

- Significantly increase the number of **African scientists** that are internationally competitive in genomics and population-based research (broadly defined)
- Establish **collaborative networks of African investigators** pursuing genomics-based, disease-oriented projects
- Create/expand genomics research **infrastructure**, particularly bioinformatics and biorepositories
H3Africa: Essential Features

- **Awards made to African PIs** at African institutions
- **Promote intra-continental collaborations** (‘South-South’)
- **Emphasis on the study of genomic and environmental determinants** of common diseases
- **To the extent possible, research and infrastructure should build upon existing resources**
H3Africa: Defining Success

- Enable African scientists to apply genomics to improve African health
- Empower African researchers to be competitive in genomic sciences
- Establish effective collaborations among African researchers on the African continent
- Achieve sustainability beyond NIH Common Fund support
Initiative 1

Infrastructure: Bioinformatics Network

H3Africa bioinformatics network for communication, training, data sharing, high-level analysis and development of new informatics tools customized for genomics research in Africa
Initiative 1

Infrastructure: Bioinformatics Network

• Nodes-based organization
  ▪ Central node to coordinate and administer network
  ▪ Distributed nodes
    o access to computational resources
    o training for both visitors and workshops
    o cutting-edge informatics research
    o high-level analytical capabilities

• RFI in April

• *RFA to be released in July 2021*
Initiative 2
Infrastructure: H3Africa Biorepository

State-of-the-art biorepository in Africa for African samples

- receive and store samples (e.g. cards, blood, DNA)
- make cell lines (?)
- distribute to research community
- samples remain under African control
Initiative 2
Infrastructure: H3Africa Biorepository

- Build on existing infrastructure
- Consider networked regional biobanks
- RFI in April 2011
- RFA for planning grant/feasibility studies in August 2011
- Full-scale repositories funded in FY14 & 15
### Initiative 3: H3Africa Research Projects

- **Cooperative Centers**
  - *RFA to be released in July for FY12 funding*

- **MEPI Linked Awards**
  - *RFA to be released in July for FY12 funding*

- **NIH grant-associated awards**
  - *RFA to be released in July for FY12 funding*

- **Cooperative Centers RFA to be re-released in FY13, FY14 year to add one additional center each year**
Initiative 3
H3Africa Research Projects

- H3Africa Cooperative Centers
  - Award to African institutions/African PIs
  - Strongly encourage South-South collaboration
  - Must have informatics capability for data management, analysis
  - Must use H3Africa Bioinformatics Network
  - Must deposit samples in H3Africa Biorepository
  - Must include training
  - Allow societal implications research component
Initiative 3

H3Africa Research Projects

• Possible scientific areas
  ▪ Genomic/environmental determinants of:
    o non-communicable diseases
    o communicable diseases
    o Mendelian disease
    o Other health-related traits
  ▪ Pharmacogenomics
  ▪ Human microbiome
  ▪ Human genetic variation
Societal Implications Research

Support research in societal implications of genomics in Africa

- provide support for independent investigators
- small grants (average size $50K)
- Fogarty has been supporting bioethics training
- in addition to any societal implications research in H3Africa Cooperative Centers
Initiative 4
Societal Implications Research

- NHGRI will support a meeting on societal implications research in Abuja, Nigeria in 2011

- Release FOA in 2012 for funding in FY13
H3Africa: Defining Success

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- Empower African researchers to be competitive in genomic sciences
- Establish effective collaborations among African researchers on the African continent
- Achieve sustainability beyond NIH Common Fund support