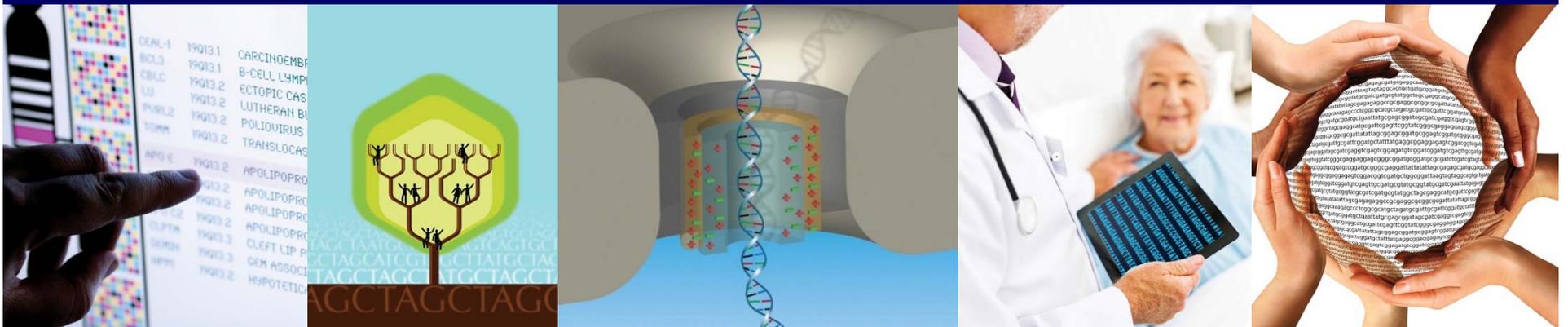


DIRECTOR'S REPORT

National Advisory Council for Human Genome Research

May 2016

Eric Green, M.D., Ph.D.
Director, NHGRI



Director's Report-Related Documents: May 2016

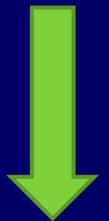
[Director's Report](#) 

[Director's Report](#) 

No.	Relevant Documents
1	Bettie Graham: Beyond Genomics
2	New Director, National Library of Medicine
3	New Director, NIH Environmental Influences on Child Health Outcomes (ECHO) Program
4	New Commissioner, U.S. Food and Drug Administration
5	National Cancer Moonshot Initiative
6	Basic Science: Bedrock of Progress
7	Genetic Research Privacy Protection Act Genetic Research Privacy Protection Act Bill Genetic Research Privacy Protection Act Fact Sheet

genome.gov/DirectorsReport

Document #



Open Session Presentation

- **Presentation from the New Director,
National Institute on Minority Health and
Health Disparities (NIMHD)**

Eliseo Perez-Stable

Director's Report Outline

- I. General NHGRI Updates**
- II. General NIH Updates**
- III. General Genomics Updates**
- IV. NHGRI Extramural Research Program**
- V. NIH Common Fund/Trans-NIH**
- VI. NHGRI Division of Policy,
Communications, and Education**
- VII. NHGRI Intramural Research Program**

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Bettie Graham: Beyond Genomics



Bettie Graham, Ph.D.
(with coaches Ray and Jean Finkleman)

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New Director, National Library of Medicine

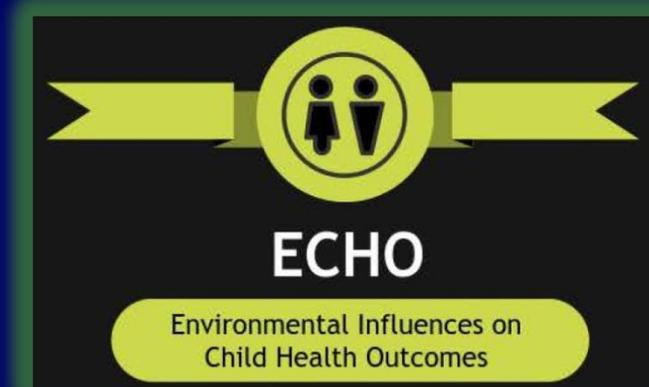


Patricia Brennan, R.N., Ph.D.

New Director, NIH Environmental Influences on Child Health Outcomes (ECHO) Program



Matthew Gillman, M.D.



Colleen Barros Departing as NIH Deputy Director for Management



Colleen Barros, M.A.



John J. McGowan, Ph.D.



New Commissioner, U.S. Food and Drug Administration



Robert Califf, M.D.



National Cancer Moonshot Initiative

The screenshot shows the NIH National Cancer Institute website. At the top, the NIH logo and 'NATIONAL CANCER INSTITUTE' are displayed. A navigation bar includes links for '1-800-4-CANCER', 'Live Chat', 'Publications', and 'Dictionary'. Below this is a main menu with 'ABOUT CANCER', 'CANCER TYPES', 'RESEARCH', 'GRANTS & TRAINING', 'NEWS & EVENTS', and 'ABOUT NCI'. A search bar is also present. The breadcrumb trail reads 'Home > Research > Key Initiatives'. On the left, a sidebar highlights 'NATIONAL CANCER MOONSHOT INITIATIVE' with sub-links for 'Research Areas', 'Task Force', 'Blue Ribbon Panel', and 'Get Involved'. The main content area features a large image of three men in a laboratory setting. Below the image is the title 'National Cancer Moonshot Initiative' and a paragraph explaining its establishment by President Obama in 2016, led by Vice President Joe Biden. To the right of this text is a light blue box with an envelope icon and the text 'Get email updates from NCI on the National Cancer Moonshot Initiative'. Below the main text is another paragraph about NCI's support for the initiative. At the bottom, there is a section titled 'Research Areas' with a small image of hands holding a vial and a paragraph describing cutting-edge research opportunities.

NIH NATIONAL CANCER INSTITUTE

1-800-4-CANCER Live Chat Publications Dictionary

ABOUT CANCER CANCER TYPES RESEARCH GRANTS & TRAINING NEWS & EVENTS ABOUT NCI search

Home > Research > Key Initiatives

AA [print] [email] [facebook] [twitter] [google+] [pinterest]

NATIONAL CANCER MOONSHOT INITIATIVE

Research Areas

Task Force

Blue Ribbon Panel

Get Involved



National Cancer Moonshot Initiative

During his State of the Union address on January 12, 2016, President Barack Obama announced the establishment of a new National Cancer Moonshot Initiative to accelerate cancer research. The initiative—led by Vice President Joe Biden—aims to make more therapies available to more patients, while also improving our ability to prevent cancer and detect it at an early stage.

Get email updates from NCI on the National Cancer Moonshot Initiative

Learn how NCI is supporting this important initiative, which seeks to accelerate progress in prevention, diagnosis, and treatment.



Research Areas

Information about the cutting-edge research opportunities that will receive additional funding, incentives, and other support to accelerate the rate of progress.

Basic Science: Bedrock of Progress

Science AAAS

LETTERS

Basic science: Bedrock of progress

Francis S. Collins^{1*}, James M. Anderson², Christopher P. Austin³, James F. Battey⁴, Linda S. Birnbaum⁵, Josephine P. Briggs⁶, Janine A. Clayton⁷, Bruce Cuthbert⁸, Robert W. Eisinger⁹, Anthony S. Fauci¹⁰, John I. Gallin¹¹, Gary H. Gibbons¹², Roger I. Glass¹³, Michael M. Gottesman¹⁴, Patricia A. Gray¹⁵, Eric D. Green¹⁶, Franziska B. Greider¹⁷, Richard Hodes¹⁸, Kathy L. Hudson¹, Betsy Humphreys¹⁹, Stephen I. Katz²⁰, George F. Koob²¹, Walter J. Koroshetz²², Michael S. Lauer²³, Jon R. Lorsch²⁴, Douglas R. Lowy²⁵, John J. McGowan²⁶, David M. Murray²⁷, Richard Nakamura²⁸, Andrea Norris²⁹, Eliseo J. Perez-Stable³⁰, Roderic I. Pettigrew³¹, William T. Riley³², Griffin P. Rodgers³³, Paul A. Sieving³⁴, Martha J. Somerman³⁵, Catherine Y. Spong³⁶, Lawrence A. Tabak¹, Nora D. Volkow³⁷, Elizabeth L. Wilder³⁸

+ Author Affiliations

*Corresponding author. E-mail: collinsf@mail.nih.gov

Science 25 Mar 2016;
Vol. 351, Issue 6280, pp. 1405
DOI: 10.1126/science.1251145



PHOTO: GPHIL DEGGINGER/ALAMY STOCK PHOTO

'Cures' Legislation Passes Senate



- **Senate HELP Committee marked up 19 bills as part of 'Cures' agenda**
- **Proposed funding increases for NIH**

Genetic Research Privacy Protection Act



- **Senate sponsors: Warren and Enzi**
- **Enhance privacy protections for individuals who contribute re-identifiable information to federally funded research**
- **Mandatory Certificates of Confidentiality**
- **FOIA exemptions**

NIH Appropriations and Budget

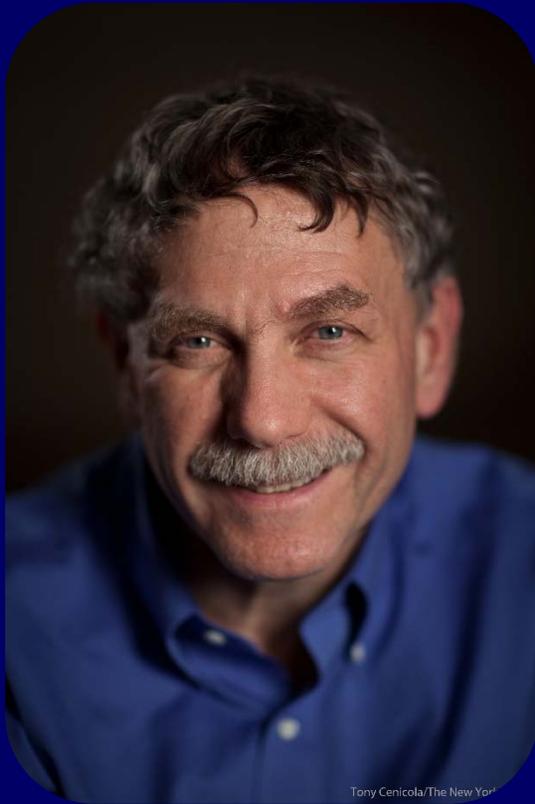
Fiscal Year 2017 President's Budget

Entity	FY15	FY16	FY17
NIH	\$30.1 B	\$32.3 B	\$33.1 B
NHGRI	\$498.7 M	\$513.2M	\$513.2 M

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AAAS 2015 Philip Hauge Abelson Prize



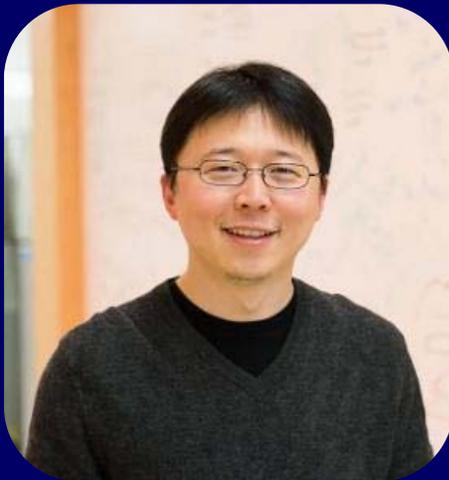
Eric Lander, Ph.D.



Canada Gairdner Awards



Anthony Fauci, M.D.



Feng Zhang, Ph.D.



Jennifer Doudna, Ph.D.



Emmanuelle Charpentier, Ph.D.

Genetics Society of America 2016 George W. Beadle Award



Susan Celniker, Ph.D.



New Fellow, Royal Society



Gil McVean, Ph.D.



Elected to National Academy of Sciences

Adrian Bird

Myles Brown

Joseph DeRisi

Philip Hieter

Hopi Hoekstra

Robert Kingston

Kenneth Kinzler

Eugene Koonin

Stephen Palumbi



**NATIONAL ACADEMY
OF SCIENCES**

New President, Rockefeller University



Richard Lifton, M.D., Ph.D.

New Chief Scientific Officer, Metabiota



Eddy Rubin, M.D., Ph.D.

Jan Witkowski Steps Down as Director, CSHL Banbury Center



Jan Witkowski, Ph.D.



MIT Technology Review

Breakthrough Technologies for 2016



Precise Gene Editing in Plants

CRISPR offers an easy, exact way to alter genes to create traits such as disease resistance and drought tolerance.



DNA App Store

An online store for information about your genes will make it cheap and easy to learn more about your health risks and predispositions.



Sequencing Human Genome Rated Top Healthcare Advance of Past 40 Years

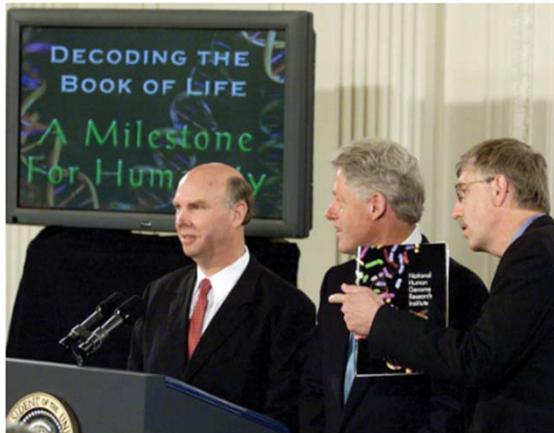
Forward from 40: The top healthcare milestones of the past 40 years

By Modern Healthcare | March 26, 2016

In celebration of Modern Healthcare's 40th anniversary, readers were asked to choose the top healthcare milestones since the magazine's founding in 1976.

Over 700 respondents to the survey selected their top five picks from each of three categories: healthcare delivery, politics and policy, and science and technology. Read on for the complete list of the 40 most significant developments of the past 40 years.

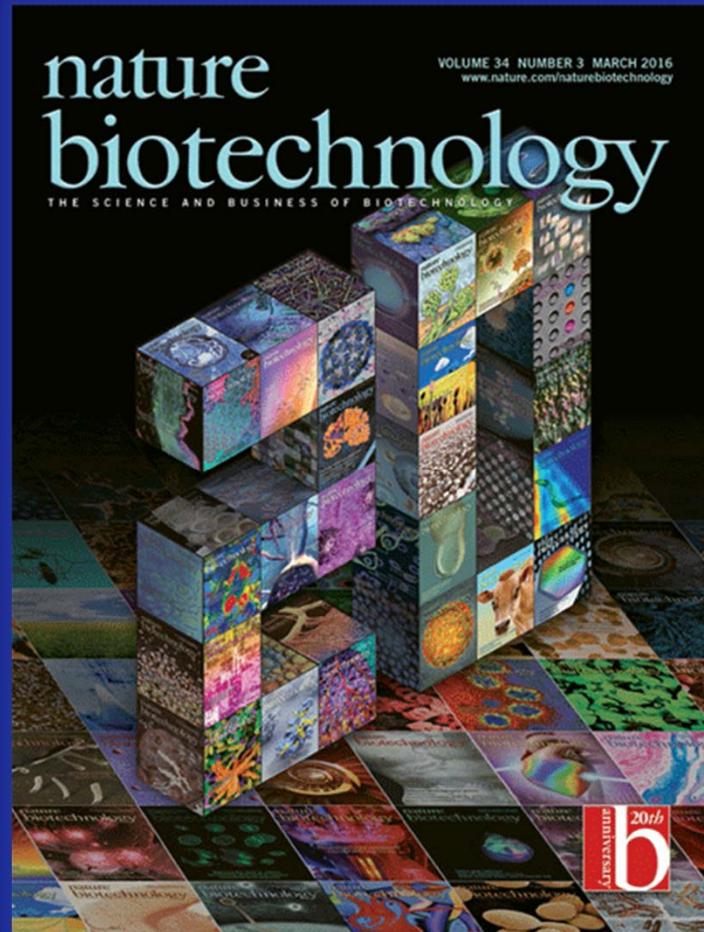
1. Sequencing the human genome



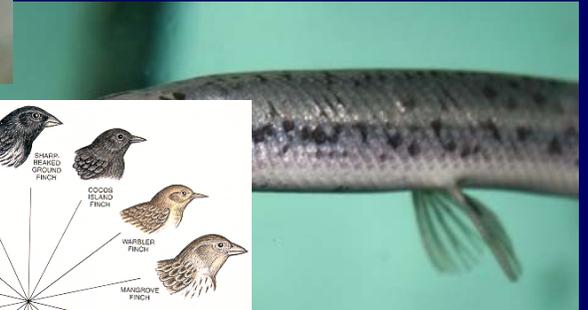
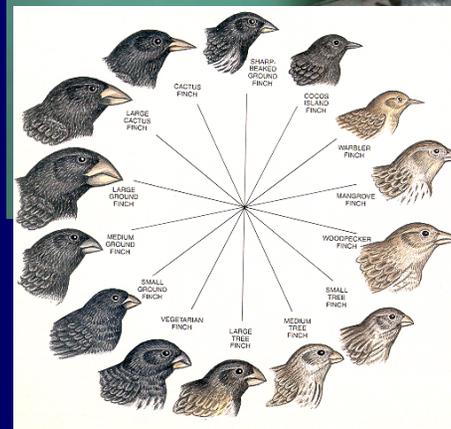
In June 2000, President Bill Clinton, flanked by Dr. Francis Collins, then director of the National Human Genome Research Institute at NIH, and Dr. Craig Venter, CEO of Celera Genomics, jointly announce the sequencing of the human genome.



20th Anniversary Issue of *Nature Biotechnology*



Genomes In The News...



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Genome Sequencing Program



2016 Consortium Meeting

- Areas of collaboration identified
- Data sharing plans outlined
- Scientific directions discussed

Technology Development Program



- **Novel Nucleic Acid Sequencing Technology Development**

 - RFA-HG-15-031 (to 33; R01, R21, and R43/44)

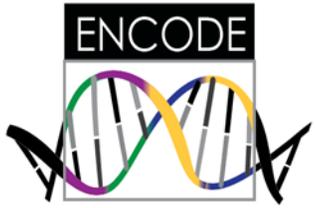
 - RFA-HG-15-039 (Direct to Phase II R44)

 - Upcoming due dates: July 14, 2016 and June 15, 2017

- **Novel Genome Technology Development**

 - PAR-16-14 (to 17; R01, R21, R43/44, and R44)

 - Upcoming due dates: October 31, 2016 and 2017



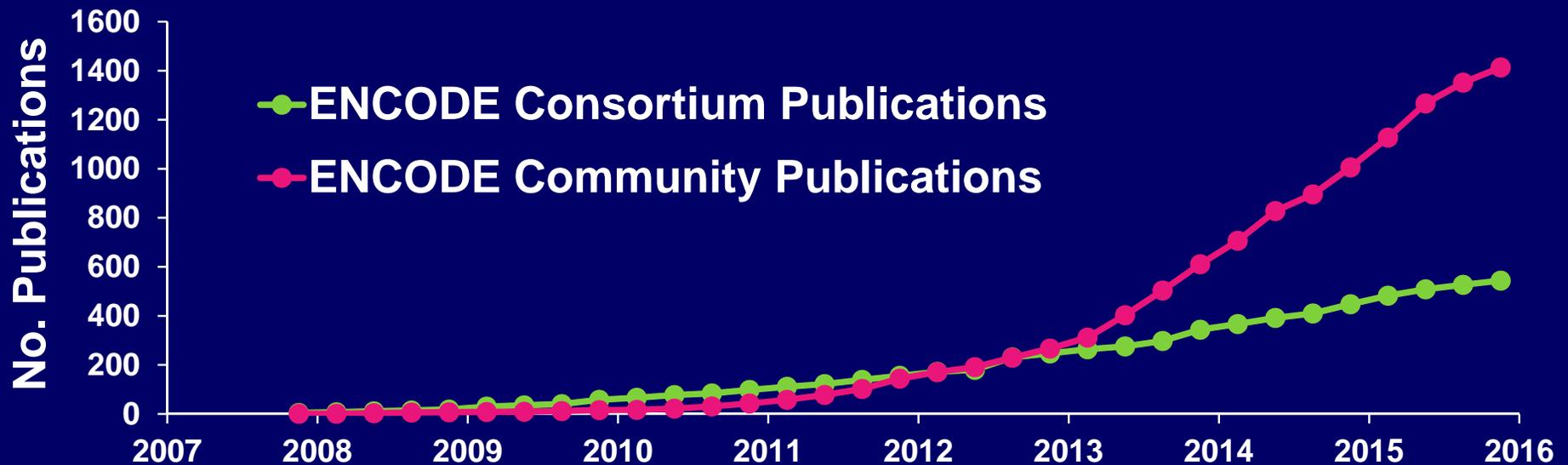
Encyclopedia of DNA Elements (ENCODE)

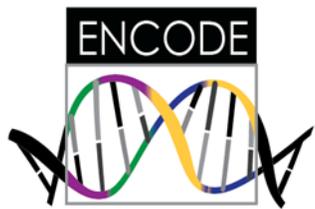
- **ENCODE Outreach and Collaboration**

ENCODE 2016: Research Applications and Users Meeting
June 8-10 (Palo Alto, CA)

Publication in *Trends in Genetics* on “Temporal Dynamics of Collaborative Networks in Large Scientific Consortia”

- **Publications using ENCODE Data**





Encyclopedia of DNA Elements (ENCODE)

- **Applications have been received for FOAs:**

- Expanding the Encyclopedia of DNA Elements (ENCODE) in the Human and Mouse (RFA-HG-16-002)

- Characterizing the Functional Elements in the Encyclopedia of DNA Elements (ENCODE) Catalog (RFA-HG-16-003)

- Computational Analysis of the Encyclopedia of DNA Elements (ENCODE) Data (RFA-HG-16-004)

- ENCODE Data Coordination Center (RFA-HG-16-005)

- ENCODE Data Analysis Center (RFA-HG-16-006)

- **Key Dates:**

- Scientific Merit Review

- Summer 2016

- Advisory Council Review

- September 2016

- Anticipated Start Date

- February 2017

YOUR HEALTH

Science In News

Home
Latest News

Updated February
Published February

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CHRISTOPHER

Health | Local News

Depression and ancestral

Originally published February

New research from hominids can reduce attack – but only

SECTION SPONSOR
ROSEANNE BARR
MAY 26

Share story

Share

Email

Tweet

SHARE

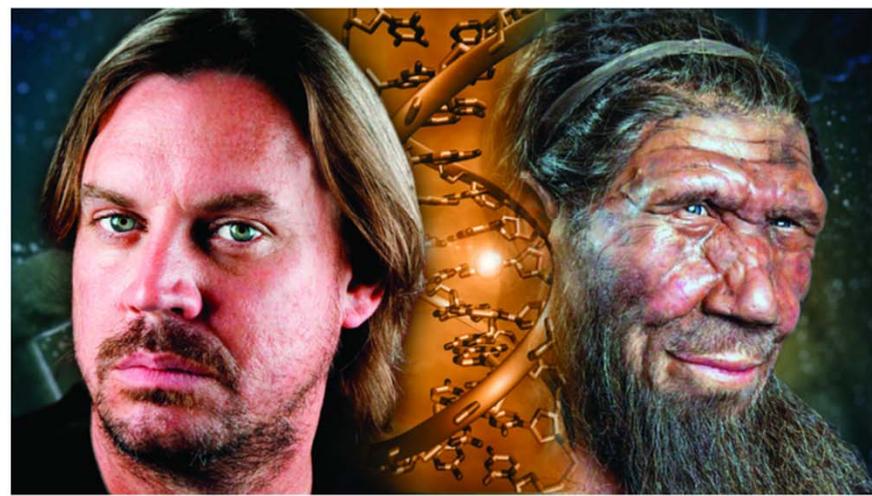
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8+



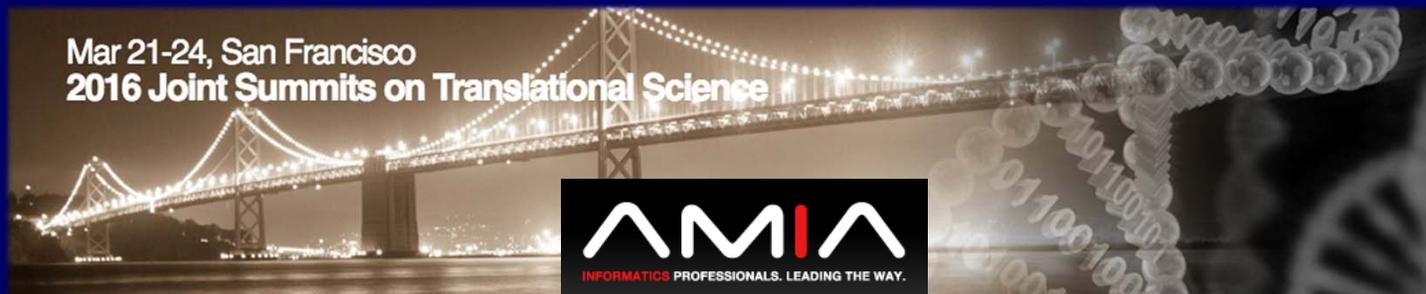
Science / Science Now

Your Neanderthal inheritance could affect your mood, your skin and your smoking habits



A new study finds Neanderthal DNA influences many physical traits in people of Eurasian heritage. (Michael Smeltzer/Vanderbilt)

Presenting Author	Title	Type
Marc Williams Casey Overby David Crosslin	Practical Implementation of Genomic Sequencing in Healthcare Settings	Panel
Geneviève Galarneau	Usage of Electronic Medical Record Data to Characterize the <i>APOL1</i> Risk Allele Association with Blood Pressure Traits	Podium Presentation
Jacqueline Kirby	CDS-KB: A KnowledgeBase of Lessons Learned for Clinical Decision Support Implementation	Podium Presentation





Clinical Sequencing Exploratory Research Program

- Enrolled 4,429 adults and 1,148 children
- 231 publications, 16 working group publications

Performance of ACMG-AMP Variant-Interpretation Guidelines among Nine

Labo... Clinical Sequencing Exploratory Research Consortium: Accelerating

Evidence-Bas...

Laura M
Jonatha
Arezou
Aleksar
Natasha
16 These a
Robert C. Green, K
Barbara A. Bernhardt, Le
Charlisse F. Caga-anan,
Stephanie M. Fullerton, L
Michelle Huckaby Lewis,
Ian D. Krantz, Teri A. Ma
Deborah A. Nickerson, Je
Joseph S. Salama, Sarc
David L. Veenstra, Nikhil
the CSER Consortium

JAMA Oncology

Research

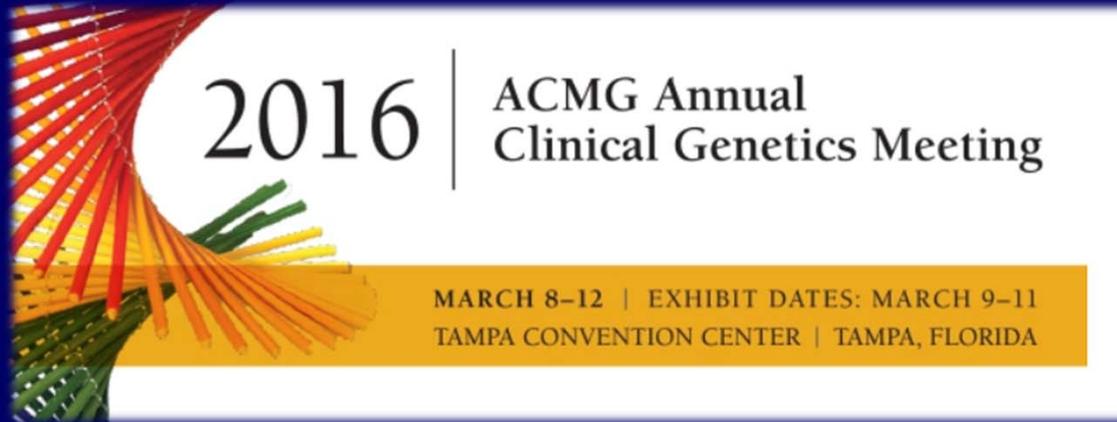
Original Investigation

Diagnostic Yield of Clinical Tumor and Germline Whole-Exome Sequencing for Children With Solid Tumors

D. Williams Parsons, MD, PhD; Angshumoy Roy, MD, PhD; Yaping Yang, PhD; Tao Wang, PhD; Sarah Scollon, MS, CGC; Katie Bergstrom, MS, CGC; Robin A. Kerstein, BS, MT; Stephanie Gutierrez, BS; Andrea K. Petersen, MD; Abhishek Bavle, MD; Frank Y. Lin, MD; Dolores H. López-Terrada, MD, PhD; Federico A. Monzon, MD; M. John Hicks, MD, PhD, DDS; Karen W. Eldin, MD; Norma M. Quintanilla, MD; Adekunle M. Adesina, MD, PhD; Carrie A. Mohila, MD, PhD; William Whitehead, MD; Andrew Jea, MD; Sanjeev A. Vasudevan, MD; Jed G. Nuchtern, MD; Uma Ramamurthy, PhD; Amy L. McGuire, JD, PhD; Susan G. Hilsenbeck, PhD; Jeffrey G. Reid, PhD; Donna M. Muzny, MSc; David A. Wheeler, PhD; Stacey L. Berg, MD; Murali M. Chintagumpala, MD; Christine M. Eng, MD; Richard A. Gibbs, PhD; Sharon E. Plon, MD, PhD



Clinical Sequencing Exploratory Research Program



- **CSER2 Request for Applications released (RFA-HG-16-010, -011, -012)**
- **Receipt dates:**
 - August 5, 2016 for non-AIDS applications**
 - September 7, 2016 for AIDS applications**



Implementing Genomics In Practice (IGNITE) Network

- 36 publications
- Genomic Medicine Payer Engagement Meeting (August 18, 2016)
- IGNITE and Beyond: The Future of Genomic Medicine Implementation Meeting (August 30, 2016)



- **ClinGen's website redesigned to feature curation results, tools, and resources**



GenomeConnect 

ClinGen

Learn more and enroll in
GenomeConnect, ClinGen
portal.



Pathogenicity Calculator 

ClinGen

Registration Required

The Calculator
provides an intuitive interface to enter and store
ACMG-style evidence tags, generate
conclusions, examine and share the
evidence behind each conclusion and identify
genes that—if present—may lead to new c



Data Model Documentation 

ClinGen

This site documents the
models created by the Data Model
Working Group.



- **Successful presence at ACMG 2016**

Newborn Sequencing in Genomic Medicine and Public Health (NSIGHT)

P E D I A T R I C S

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

JANUARY 2016 • VOLUME 137 • SUPPLEMENT 1

SPECIAL SUPPLEMENT

Bioethical Issues in Pediatrics: A Series of Supplements to
Pediatrics

Supplement V:

Ethical Issues in Genomic Testing of Children

Genomic Medicine Working Group

NHGRI Genomic Medicine IX: *Bench to Bedside – Mind the Gaps*

April 19-20, Silver Spring, MD

- Reviewing successful interactions between basic scientists and clinicians
- Identifying ways to enhance communications
- Integrating basic science efforts with clinically important questions



Computational Genomics and Data Science Program Meetings

NHGRI Large Genomic Resources Meeting

May 23-24, 2016

- **Discuss new organizational models for:**
 - Model Organism Databases
 - Gene Ontology Consortium
- **Participants:**
 - PIs and key personnel
 - External advisors (including Council)
 - NIH staff
- **Will report to Council in September 2016**



Computational Genomics and Data Science Program Meetings

NHGRI Informatics Workshop

Sept 29-30, 2016

- Develop plan to expand and strengthen the NHGRI extramural computational and data science portfolio over the next 5-10 years
- Will report to Council in February 2017



Research Training and Career Development Program



**2016 NHGRI Annual Trainee Meeting
April 7-8, 2016**

Research Training and Career Development Program

- **Renewal of existing Data Analysis and Coordinating Center (DACC)**

PIs: Drs. Treva Rice and Donna Jeffe

- **Reissue Diversity Action Plan (DAP) Program announcement later this year**
- **New Genomic Medicine and Ethical, Legal, Social Implications (ELSI) T32 training grants**



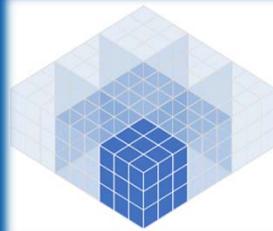
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Integrative Human Microbiome Project



- **NIST-NIAID-HMP Workshop: August 2016**
- **Microbiome Interagency Working Group**
- **‘Microbiome Futures’ Meeting: August 2017**



NIH LINCS
PROGRAM

1813 Bang Wong - Making LINCS accessible to all users: Approaches from Connectivity Map

Information-rich dashboards

Results from 10 analysis across multiple assays

NIH Library of Integrated Network-Based Cellular Signatures (LINCS) Meeting

TRANSCRIPTIONAL DIVERSITY
Concordance of transcriptional changes induced by Ca across doses and across cell types. Concordance circles indicate dose concordance in a cell line. Positions relative to cross bar indicate concordance between cell types.

CONNECTIVITY TO REFERENCE PERTURBAGENS
Proportion of the reference database that connects significantly to Ca is shown with bar chart showing fraction of perturbagens (y-axis), and also plot of connectivity across multiple perturbagens of a pharmacological or pathway class (right).

Automated Analysis
CEL2: Chemokine ligands, NFKB1A: Nucleosome repeat domain-containing, CD40: No information, NMDA: RNA binding motif (RBM), containing, SORL1: No information, ezh2ac: CP (EZH2)KCN

CANCER CELL LINE SENSITIVITY



- First LINCS outreach meeting held in March
- First LINCS data challenge just opened
- NIH now receiving grant applications from non-LINCS scientists that utilize LINCS resources

Protein Capture Reagents Program

- **Grantee Phase:** near completion, one grantee finishing production of monoclonal antibodies
- **Contract Phase:** third party validation of ~500 antibodies out of 1,700+ produced



PROTEIN CAPTURE
REAGENTS PROGRAM



Protein Capture Reagents Program

The Common Fund's **Protein Capture Reagents** program is developing new resources and tools to understand the critical role the multitude of cellular proteins play in development, health, and disease. These resources will support a wide-range of research and clinical applications by enabling the isolation and tracking of proteins of interest.

[Full Catalog](#)



Human Heredity and Health in Africa (H3Africa)



- **Community Engagement Evaluation Workshop**
March 2016 (Stellenbosch, South Africa)
- **8th Consortium Meeting (Dakar, Senegal)**
Editors Publication Workshop
Sustainability Panel
African Society of Human Genetics Meeting
- **Renewed by Common Fund**

Undiagnosed Diseases Network (UDN)



UDN Site Locations



516 Applications
185 Acceptances

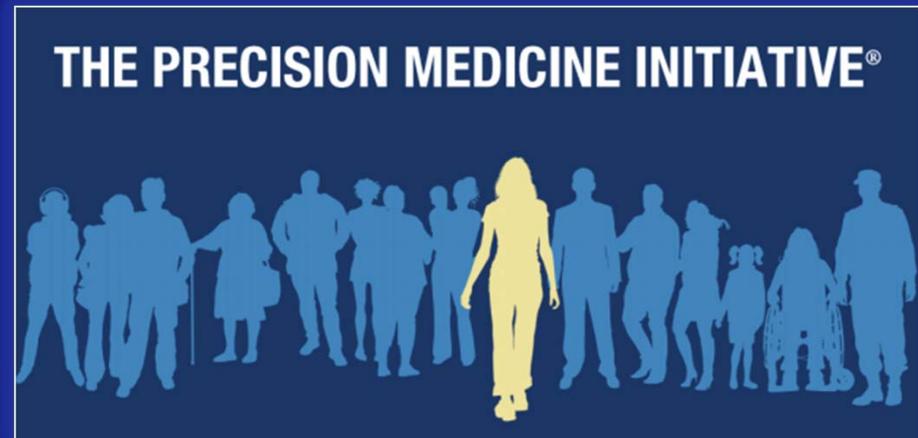


Document 35

New Director, Precision Medicine Initiative (PMI) Cohort Program



Eric Dishman



Precision Medicine Initiative (PMI) Cohort Program Activities



VANDERBILT
UNIVERSITY

verily

WONDROS

HCM
STRATEGISTS

HRSA
Health Resources & Services Administration



Institutional
Board (IRB)

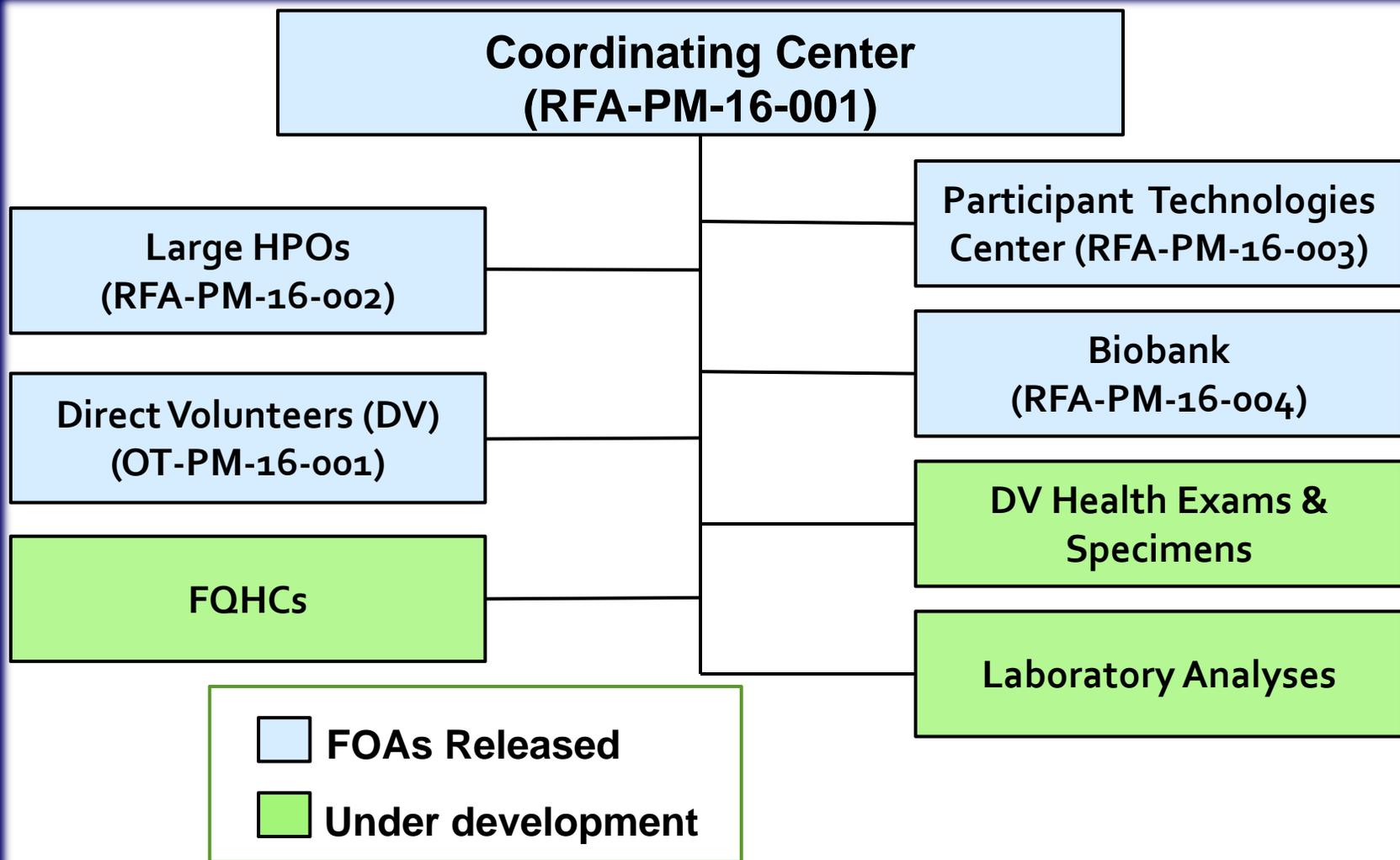
COMMUNITY HEALTH CENTER
FQHC
QUALITY



HARVARD
MEDICAL SCHOOL



Precision Medicine Initiative (PMI) Cohort Program Components



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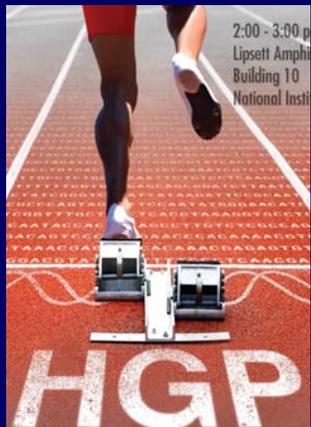
Genomic Medicine on Genome.gov



- Central landing page for general audiences
- Search engine optimization
- New URL aliases
- Updated content and improved navigation

History of Genomics Program

- Oral histories
- “History of Genomics & Molecular Biology” lecture series
- “A Quarter Century after the Human Genome Project's Launch: Lessons Beyond the Base Pairs” seminar series



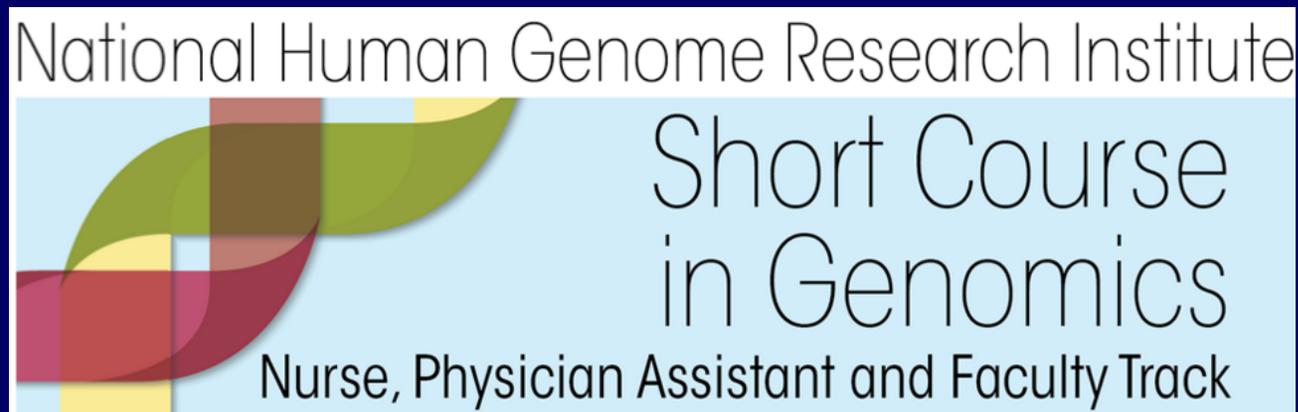
Investigational Device Exemptions (IDEs) and Genomic Research Workshop



- **Save the Date: Friday, June 10, 2016**
- **To register, email: NHGRIIDEWorkshop@nih.gov**

Short Course in Genomics: Nurse, Physician Assistant, and Faculty Track

- Sponsored by the Genomic Healthcare Branch
- Targets healthcare professionals and their educators
- Review existing curricula and successful models
- Application deadline: May 20, 2016



**August 1-3,
2016 at NIH**

National DNA Day 2016

National DNA DAY APRIL 25 Celebrating Genomics Through Awareness

Find Events Plan An Event Celebrate With NHGRI Get Activity Ideas Learn The History Visit Newsroom

Connect with DNA Day



National DNA Day is a unique day when students, teachers and the public can learn more about genetics and genomics! The day commemorates the completion of the Human Genome Project in April 2003, and the discovery of DNA's double helix in 1953. [Subscribe to our newsletter!](#)

Find Events in Your Area

Chat With Geneticists in the "Ask Me Anything" Series

Join @DNADay For a Twitter Chat

Check out our 2016 DNA Day Lecture

The National DNA Day Network has events all over the country. Find an event near you to celebrate DNA Day.

Join NHGRI, pgEd, and ASHG for a week-long National DNA Day "Ask Me Anything" (AMA) Series on reddit. /r/Science.

#DNADay16

Harry Potter and the Genetics of Wizarding

National DNA DAY APRIL 25 Celebrating Genomics Through Awareness

Find Events Plan An Event Celebrate With NHGRI Get Activity Ideas Learn The History Visit Newsroom

Connect with DNA Day

Find Events

National DNA Day Events



Map showing National DNA Day Events across the United States.

National DNA DAY AMA SERIES

"Ask Me Anything" (AMA) Series
On the reddit science community forum
"/r/Science"



Hosted by ASHG, pgEd, and NHGRI
Featuring prominent geneticists from a range of research areas.

**Monday, April 18 – Friday, April 22,
& Monday, April 25**



National DNA DAY TWITTER CHAT

#DNADay16 @DNADay

Monday, April 25th, 11:00 a.m.

Join us for an exciting Twitter chat session celebrating genetics and genomics.



Harry Potter and the Genetics of Wizarding



Eric P. Spana, Ph.D.
Assistant Professor of the Practice
Department of Biology,
Duke University



HOT (Human Origins Today) Topic:
**Genes and Animal Coloration:
It's Not All Black and White**



William J. Pavan, Ph.D.
Senior Investigator,
Genetic Disease Research Branch
National Human Genome Research Institute

National Museum of Natural History
Friday, April 29, 2016 , 4:00 p.m.–5:00 p.m.

FREE and open to the public



National Human Genome Research Institute

2016 USA Science & Engineering Festival



USA SCIENCE & ENGINEERING FESTIVAL

FREE EXPO: APRIL 16 & 17, 2016

WALTER E. WASHINGTON CONVENTION CENTER - WASHINGTON D.C.

FOUNDING & PRESENTING HOST: **LOCKHEED MARTIN**



Genome: Unlocking Life's Code

Exhibition Travel Schedule

2016

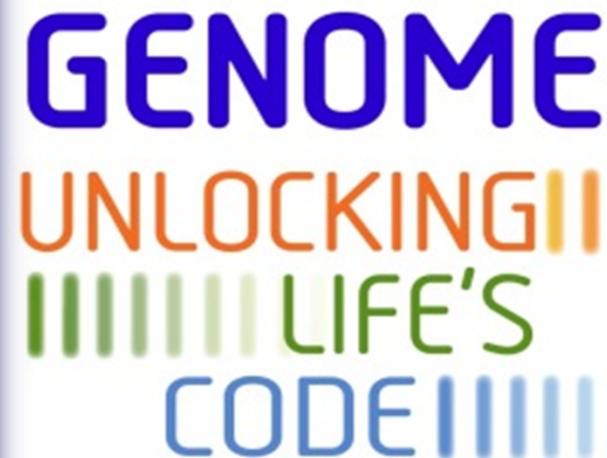
May 21-September 5
Natural History Museum of Utah
Salt Lake City, UT

September 30-January 1
Exploration Place
Wichita, KS

2017

January 28-May 29
Peoria Riverfront Museum
Peoria, IL

June 12-September 11
Health Museum
Houston, TX



GENOME
UNLOCKING
LIFE'S
CODE

Partnership for Community Outreach and Engagement in Genomics

Your GENOME & YOU

Knowing about your genome helps you understand your health and supports your health decisions.

GENOME is just a fancy word for all your DNA.

Your GENOME contains all the instructions for you to grow throughout your lifetime. These instructions are passed down from your mother and father.

$\frac{1}{2}$ Father $\frac{1}{2}$ Mother

Your GENOME

Height Eye color Disease

These instructions make you unique.

You can play an active role in keeping your genome healthy. You can eat healthy foods. You can exercise. You can avoid things that might cause diseases.

Your Life

Your Environment

We are learning new things about the human genome every day.

Developed by the National Human Genome Research Institute's Partnership for Community Outreach and Engagement in Genomics. To find out more about genetics and genomics, visit www.genome.gov.

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Your Life

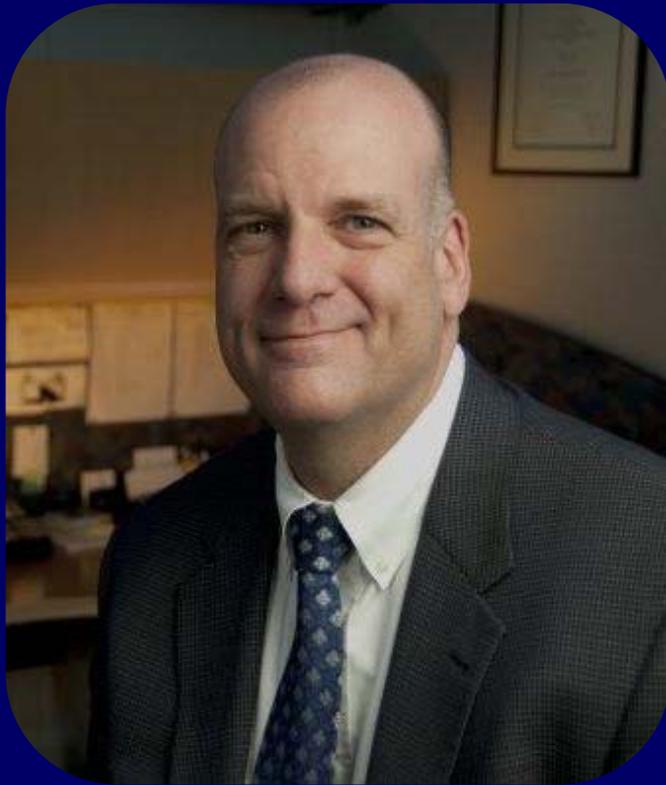
Your Environment

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Director's Report Outline

- I. General NHGRI Updates
- II. General NIH Updates
- III. General Genomics Updates
- IV. NHGRI Extramural Research Program
- V. NIH Common Fund/Trans-NIH
- VI. NHGRI Division of Policy,
Communications, and Education
- VII. NHGRI Intramural Research Program

Senior Member, International Society for Computational Biology



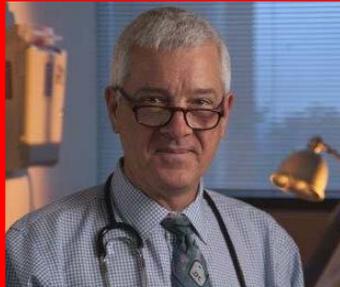
Andy Baxevanis, Ph.D.



NHGRI Intramural Research Highlights

**Genetics
inMedicine** Official Journal of the American College of Medical Genetics and Genomics

An electronic atlas of human malformation syndromes in diverse populations



**Clinical
Chemistry**

Systematic Evaluation of Sanger Validation of Next-Generation Sequencing Variants

AJHG

Biallelic *BRCA2* Mutations Shape the Somatic Mutational Landscape of Aggressive Prostate Tumors





To receive *The Genomics Landscape*,
go to list.nih.gov

Search for **NHGRILANDSCAPE**

Past issues can be accessed at:
genome.gov/27527308



National Human Genome Research Institute
Advancing human health through genomics research

Thanks!



Special Thanks!



NATIONAL HUMAN GENOME RESEARCH INSTITUTE



***Advancing human health
through genomics research***