



**April 7, 2015**

Spring brings a welcome increase in temperatures (and decrease in snowfall!), as well as other changes around NIH. At the end of March, my friend and colleague, Dr. Harold Varmus, [ended his tenure](#) as Director of the National Cancer Institute. I have had the pleasure of collaborating with Harold on joint NCI-NHGRI efforts [most notably The Cancer Genome Atlas (TCGA)] and learning from him around the Institute/Center Director's table. We have also enjoyed having the Varmus research laboratory within the NHGRI Intramural Research Program. His scientific leadership has been invaluable to NCI and NIH, and we wish him all the best in his future endeavors in New York City.

Also of note, I just returned from The Tech Museum of Innovation in San Jose, California, where I joined several leading Bay Area genomics leaders for an engaging public program entitled "[Big Data, Genomics, and Precision Medicine](#)." The exhibition *Genome: Unlocking Life's Code* is still on display in San Jose, and it will remain there until the end of this month, after which it will travel to my hometown of St. Louis, Missouri. We look forward to additional future events associated with the exhibition as it travels across North America.

April's *The Genomics Landscape* features stories about:

- [Celebrating DNA Day 2015: Engaging Teachers to Inspire Students](#)
- [NIH Workshop on Building a Precision Medicine Research Cohort: Meeting Report](#)
- [NIH Position on Cloud Computing and Genomics Data](#)
- [Senator Ben Cardin Recognizes NHGRI Clinical Director Dr. William Gahl](#)
- [Pi Day @ NIH: Eric Lander Presents Inaugural Data Science Lecture](#)
- [NLM Hosts "A Tribute to Marshall Nirenberg"](#)

All the best,

Watch here for current and upcoming locations of the Smithsonian-NHGRI exhibition "*Genome: Unlocking Life's Code*" as it tours North America!

Traveling Exhibition	
Current	Next
<b>GENOME UNLOCKING LIFE'S CODE</b> January 22 - April 27, 2015 The Tech Museum of Innovation San Jose, California See <a href="http://unlockinglifescode.org">unlockinglifescode.org</a> for details	May 15 - September 10, 2015 The Saint Louis Science Center St. Louis, Missouri

~~To receive *The Genomics Landscape*, sign up via: [list.nih.gov/cgi-bin/wa.exe?A0=NHGRILANDSCAPE](http://list.nih.gov/cgi-bin/wa.exe?A0=NHGRILANDSCAPE)~~

~~To suggest future topics, send an e-mail to: [NHGRILANDSCAPE@MAIL.NIH.GOV](mailto:NHGRILANDSCAPE@MAIL.NIH.GOV)~~

## Celebrating DNA Day 2015: Engaging Teachers to Inspire Students

On April 24, we will celebrate [National DNA Day 2015](#), which commemorates the completion of the Human Genome Project in 2003 and the discovery of DNA's double-helical structure in 1953. DNA Day offers students, teachers, and the public exciting opportunities to learn about the latest advances in genomics and to explore how genomics may be meaningful to their lives. Each year, NHGRI celebrates DNA Day with a number of events. This year, the Institute is working to engage teachers in genomics education through a variety of activities and new teaching resources. Below, I highlight some of our DNA Day 2015 activities, as well as our teacher-focused resources that bring genomics into the classroom.



This year, we launched our first “[Pinterest Challenge](#)” to leverage new technologies and social media to encourage teachers to take part in DNA Day. Pinterest is an online forum in which people can bookmark interesting photos or sources of information from the internet and then share these with others. The Pinterest Challenge offers K-12 teachers and their science classes an opportunity to create Pinterest boards with images and/or links to genomic resources for educating students in the classroom. All entries will receive an NHGRI Pinterest Challenge certificate, and the top 10 entries from the United States will win classroom educational packets that include useful CD-ROMs and printed learning materials. The Pinterest Challenge began on March 2 and ends on April 17, 2015. The top boards will be announced and featured on the [Genome: Unlocking Life's Code](#) exhibition website on April 24.

Also this year, we will be launching two new resources for use in the classroom. A new “Human Identity Lesson Plan” is one of a series of inquiry-based lessons inspired by the *Genome: Unlocking Life's Code* exhibition and website. This educational resource aims to bring into high school classrooms some of the compelling examples of genomics research projects that are featured in the exhibition. The lessons are developed collaboratively with educators, scientists, teachers, and students nationwide; they address the concepts of inheritance and variation by engaging students in actual genomics research studies on human genetic variation, identity, and ancestry.

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## NIH Workshop on Building a Precision Medicine Research Cohort: Meeting Report

PRECISION MEDICINE INITIATIVE

On February 11-12, NIH convened experts from a variety of fields at a workshop entitled “Precision Medicine Initiative: Building a Large U.S. Research Cohort.” The workshop was an important initial step in planning for the recently announced Precision Medicine Initiative. The executive summary of the workshop is now available: [nih.gov/precisionmedicine/workshop-summary.pdf](#). For more information about the Precision Medicine Initiative, visit [nih.gov/precisionmedicine](#).

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## NIH Position on Cloud Computing and Genomics Data



Recently, NIH released a [position statement](#) entitled “Use of Cloud Computing Services for Storage and Analysis of Controlled-Access Data Subject to the NIH Genomic Data Sharing Policy.” NIH is now allowing investigators to request permission to transfer controlled-access genomic and associated phenotypic data obtained from NIH-designated data repositories under the auspices of the NIH Genomic Data Sharing (GDS) Policy to public or private cloud systems for data storage and analysis. NIH expects cloud computing systems to meet the same data use and security standards outlined in [NIH Security Best Practices for Controlled-Access Data Subject to the NIH GDS Policy](#), as well the data user's institution's own IT security requirements and policies. For further details, see [nihdatascience.wordpress.com/2015/03/26/the-cloud-dbgap-and-the-nih/](#).

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## Senator Ben Cardin Recognizes NHGRI Clinical Director Dr. William Gahl



Last month, Senator Ben Cardin (D-Maryland) applauded the work of William Gahl, M.D., Ph.D., and the Undiagnosed Diseases Program (UDP) on the Senate floor. He spoke about the dedication

Hands-on, inquiry-based learning is used to highlight the concepts of collecting data, analyzing and comparing data, and drawing conclusions. The Human Identity Lesson Plan is also designed to raise awareness about career opportunities in genomics, emphasize the importance of multidisciplinary collaboration for scientific discoveries, and address common misconceptions in genetics and genomics. This lesson plan, as well as a number of existing teaching resources, will be made available on the [Genome: Unlocking Life's Code](#) exhibition website.

Additionally, a new "What Do You Think" online interactive will be available on the [Genome: Unlocking Life's Code](#) exhibition website just in time for DNA Day. "What Do You Think" is a repurposing of one of the most popular interactive stations in the *Unlocking Life's Code* exhibition. The online interactive presents a series of challenging and engaging ethical questions about genetics and genomics research, allowing users to probe issues about genomics and health, research, identity, privacy, testing in children, discrimination, and societal applications. There are many sides to the issues presented and other probing questions posed. "What Do You Think" is an excellent tool for any learning environment—it can be viewed on desktops, laptops, or tablets.



The above examples are just a few of the activities and resources available for DNA Day 2015. More information about all of the NHGRI DNA Day activities can be found at [genome.gov/10506367](http://genome.gov/10506367), on Twitter at [twitter.com/DNAday](https://twitter.com/DNAday), or on the DNA Day Facebook page at [facebook.com/DNAday](https://facebook.com/DNAday). If you are interested in learning more about activities and resources available for teachers, students, and the public throughout the year, I encourage you to sign up for the *Unlocking Life's Code* e-Newsletter at [unlockinglifescode.org/connections/newsletter](http://unlockinglifescode.org/connections/newsletter).

The NHGRI Education and Community Involvement Branch (ECIB)—part of the Institute's Division of Policy, Communications, and Education—is the catalyst for these teacher-focused education programs. Working with outside organizations, ECIB reaches students and teachers from across the United States and around the world. To learn more about the full complement of ECIB programs and activities, visit [genome.gov/Education/](http://genome.gov/Education/).



and hard work exhibited by Dr. Gahl and his UDP team. Mr. Cardin plans to share accomplishments of other outstanding Federal workers over the coming weeks on the Senate floor, so that Americans can understand how government works for America. To view Senator Cardin's remarks about Dr. Gahl, see [c-span.org/video/?c4531475/sen-ben-cardin-dr-bill-gahl](http://c-span.org/video/?c4531475/sen-ben-cardin-dr-bill-gahl).

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### *Pi Day @ NIH: Eric Lander Presents Inaugural Data Science Lecture*



NIH celebrated Pi Day 2015 on Pi Day Eve (March 13, 2015) to promote data science, especially those components important for the biological sciences. Dr. Eric Lander gave the Inaugural Data Science Speaker Series Lecture as part of Pi Day. His presentation, entitled "The Role of the Quantitative Sciences in the Biomedical Sciences," included insights about the essential role that data science has played in sequencing the human genome, in identifying important functional regions of the human genome, and in understanding the physical form of the human genome. To view the webcast of Pi Day @ NIH and Dr. Lander's talk (starting at 1:29), see [videocast.nih.gov/summary.asp?Live=15906&bhcp=1](http://videocast.nih.gov/summary.asp?Live=15906&bhcp=1).

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### *NLM Hosts "A Tribute to Marshall Nirenberg"*



*Marshall Nirenberg in the lab, ca. 1962*

To celebrate the 50<sup>th</sup> anniversary of the deciphering of the genetic code, the National Library of Medicine (NLM) recently held a [tribute](#) to Nobel Laureate Dr. Marshall Nirenberg. Speakers at the tribute included NIH leadership as well as family and friends of Dr. Nirenberg who shared their thoughts about his contributions to science and his personal journey. The NLM *Profiles in Science* hosts a collection of Dr. Nirenberg's [papers](#), including his 1965 handwritten genetic code [chart](#). For more information, see the NLM blog [circulatingnow.nlm.nih.gov/tag/marshall-nirenberg/](http://circulatingnow.nlm.nih.gov/tag/marshall-nirenberg/).

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## ***Genomics Research***

[Study Reveals How Genetic Changes Lead to Familial Alzheimer's Disease](#)

[Genetically Speaking, Mammals Are More Like Their Fathers](#)

[Unregulated Web Marketing of Genetic Tests for Personalized Cancer Care Raises Concerns in New Study](#)

[New Understanding of the Inner Workings of Our Genetic Tool Kit Should Help Us Make Smarter Repairs](#)

[Scientists Seek Ban on Method of Editing the Human Genome](#)

[Is Most of Our DNA Garbage?](#)

[Circulating Tumor DNA in Blood Can Predict Recurrence of the Most Common Type of Lymphoma](#)

[Dogs May Help Researchers Sniff Out New Cancer Detection and Treatment Strategies](#)

## ***Genome Advance of the Month***

[Scientists Create a New "Roadmap" for the Human Epigenome](#)

## ***NIH News of Interest***

[Fiscal Year 2016 Budget Request](#)

[NIH-led Effort Launches Big Data Portal for Alzheimer's Drug Discovery](#)

[Dr. Harold Varmus Steps Down as NCI Director](#)

[NIH Director Sees Solving Data Puzzle as Key to U.S. Precision Medicine](#)

[The Cancer Genome Atlas \(TCGA\): The Next Stage](#)

[NIH Forms Team of Experts to Chart Course for the President's Precision Medicine Initiative Research Network](#)

## ***New Videos***

[2015 Jeffrey M. Trent Lectureship in Cancer Research: The Complexity of Genetic Susceptibility to Cancer - Dr. Stephen J. Chanock](#)

[Research Directions in Genetically-Mediated Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis](#)

[From Genome Function to Biomedical Insight: ENCODE and Beyond](#)

[NIH Pi Day 2015](#)

[A Tribute to Marshall Nirenberg](#)

## ***Funding Opportunities***

[Interoperability of NIH Funded Biomedical Data Repositories Supplements](#)

[Big Data to Knowledge Advancing Biomedical Science Using Crowdsourcing and Interactive Digital Media](#)

## ***Funding News***

[NIH Grant Applications and the NIH Genomic Data Sharing Policy](#)

[Clarification of Language in Centers for Common Disease Genomics RFA](#)

[Requirement of Grantees and Contractors to Submit Invention Disclosures, Related Reports and Documents Via iEdison](#)

[Frequently Asked Questions for Metabolomics Core for the Undiagnosed Diseases Network RFA](#)

## ***Media Availability***

[Researchers Grasp Wider Role for Genetic Variation in Regulatory Elements of Genome](#)

## ***Requests for Feedback***

[FDA Issues Draft Guidance on Use of Electronic Informed Consent \(eIC\)](#)

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