

Big Data and Computational Biology at the JHU School of Medicine

Steven Salzberg

Departments of Biomedical Engineering, Computer
Science, and Biostatistics

Director, Center for Computational Biology

<http://www.forbes.com/sites/stevensalzberg>

The Center for Computational Biology

A joint research center in the McKusick-Nathans Institute of Genetic Medicine, the Department of Computer Science, and the Department of Biostatistics

The Center for Computational Biology (CCB) is a multidisciplinary center dedicated to research on genomics, genetics, DNA sequencing technology, and computational methods for DNA and RNA sequence analysis. CCB brings together scientists and engineers from many fields, including computer science, biostatistics, genomics, genetics, molecular biology, physics, and mathematics, all of whom share a common interest in gaining a better understanding of how genes and genomes affect biological functions. We develop and apply technology that uses sequence data to study a wide range of questions, including how genes cause disease, how genes change in response to different conditions within the cell, and how genomes evolve.

News

- **June 24, 2014.** Three CCB faculty - Mihaela Perteau, Art Delcher, and Steven Salzberg - are named 'Highly Cited' by Thomson Reuters. By analyzing the number of ...[\(read more\)](#)
- **March 20, 2014.** An international team led by David Neale at UC Davis published the genome of the loblolly pine tree, the largest genome sequenced and assembled ...[\(read more\)](#)
- **March 2014.** Kraken, a new tool developed by Derrick Wood and his advisor Steven Salzberg, is published in *Genome Biology*. Kraken is very fast program for classifying ...[\(read more\)](#)
- **February 2014.** Ben Langmead is awarded a Sloan Research Fellowship. Since 1955, these fellowships

>25 faculty from 4 Schools: Medicine, Engineering, Public Health, and Arts & Sciences



Genomics, circa 2001

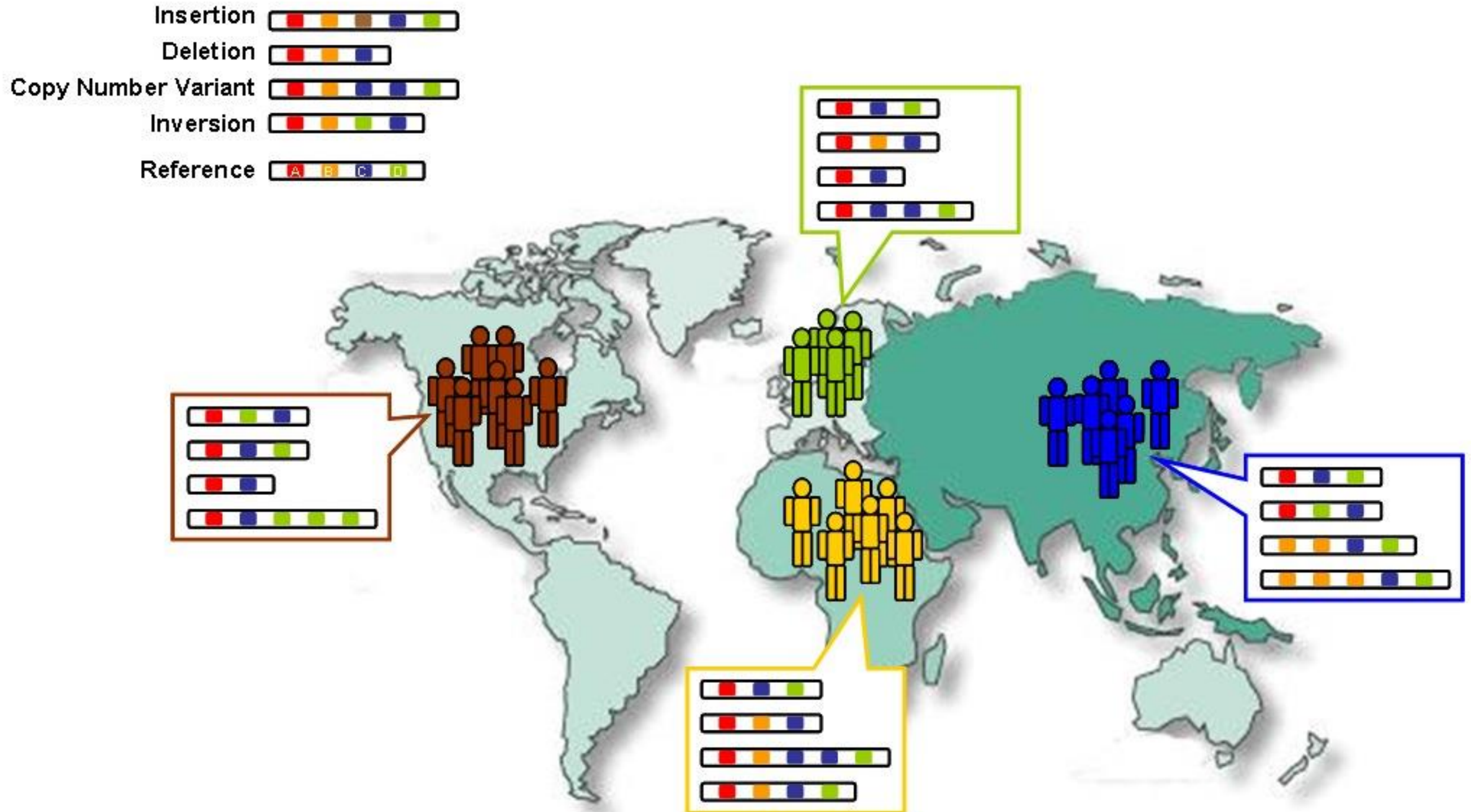
from the \$25 million genome
to
the \$1000 genome

1 trillion bases in 1 run

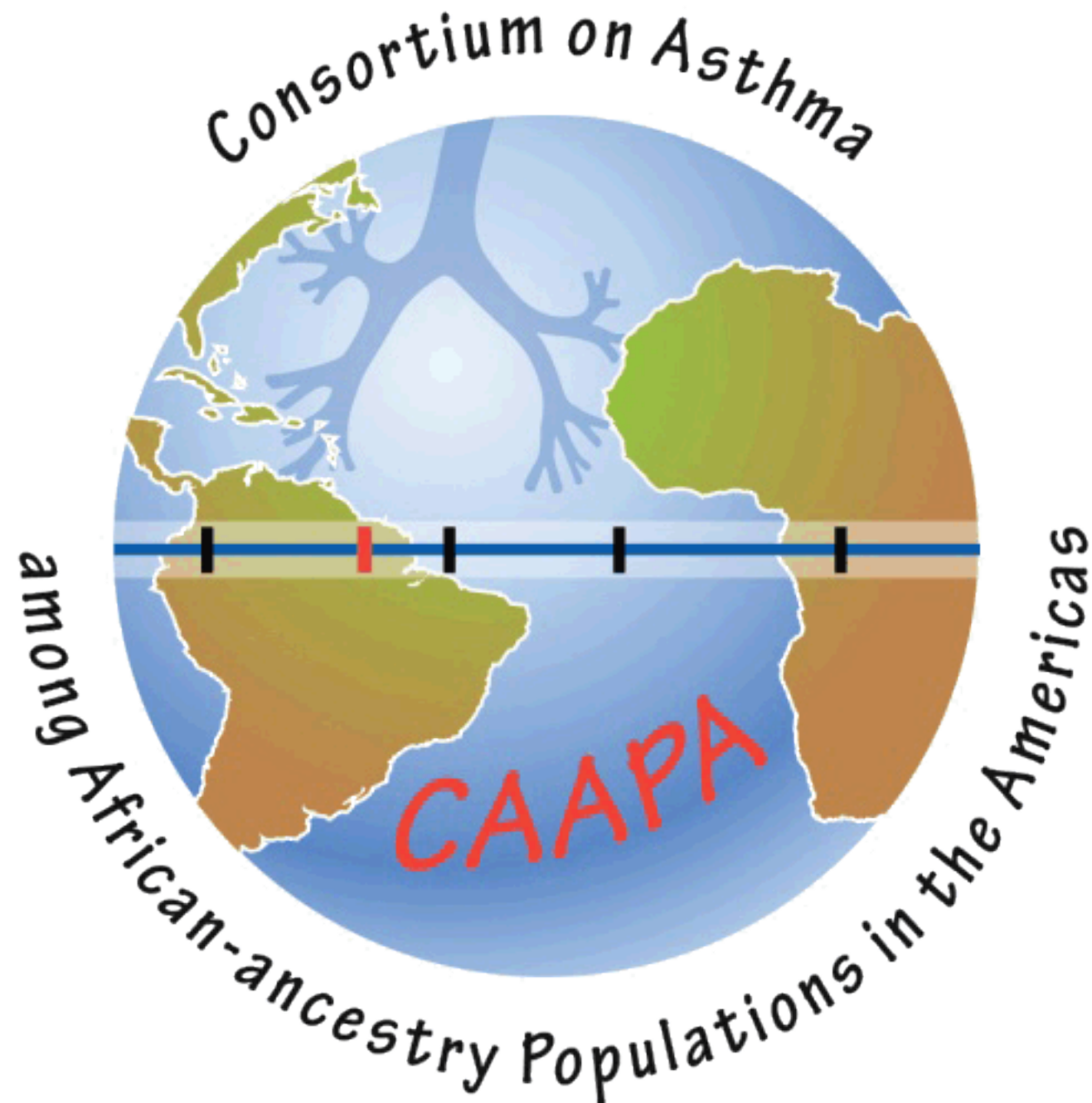


the Illumina HiSeq 2500

1000 Genomes Project



1000+ genomes at Hopkins



Kathleen Barnes
Professor of Medicine
Director, Bayview Genetics Research Facility

the data are growing
still faster

100,000 Genomes in the UK



Search



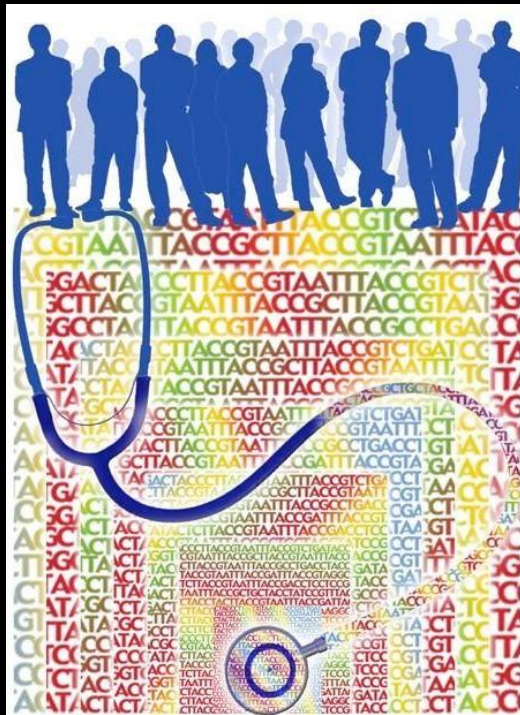
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Press release

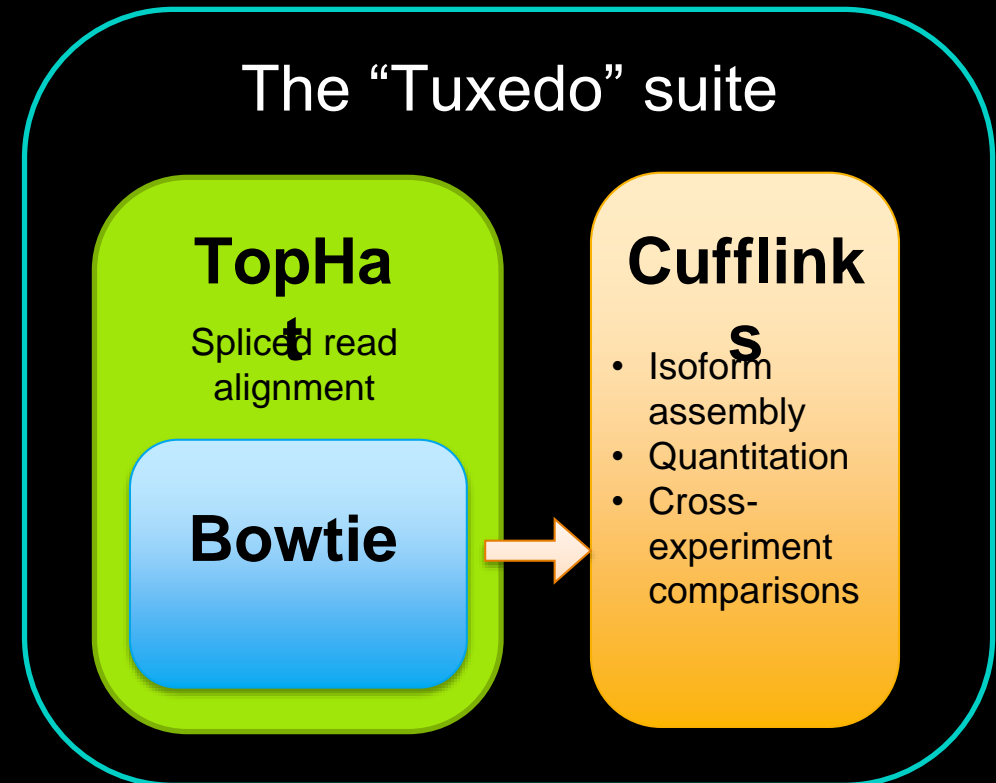
DNA tests to revolutionise fight against cancer and help 100,000 NHS patients

From: [Prime Minister's Office, 10 Downing Street](#) and [The Rt Hon David Cameron MP](#)
First published: 10 December 2012
Part of: [Investing in research, development and innovation](#) and [Science and innovation](#)

Sequencing humans



Transcriptome sequencing



De novo assembly



Loblolly pine



Heliconius melpomene



Strawberry



Tuatara



Microbiome sequencing



SOM



CCB (Welch)



BSPH



Bayview



IDIES

