

A Tour of Next Generation Sequencing: Inside the Washington University Genome Center

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Scene 1 – Introduction (with Elaine Mardis)

Chimp - iStockphoto

Platypus – Nicole Dupliax, NHGRI Image Gallery:
<http://www.genome.gov/pressDisplay.cfm?photoID=20050>

Zebra finch – iStockphoto

Macaque – iStockphoto

Bacteria (*Legionella pneumophila*) - Janice Haney Carr, image 11152 in the CDC Public Health Image Library: <http://phil.cdc.gov/phil/home.asp>

Graph – from the Genome Center

Breast Cancer image – Cecil Fox, NCI Visuals Online:
<http://visualsonline.cancer.gov/details.cfm?imageid=2289>

Karyotype image – Jane Ades, NHGRI Image Gallery:
<http://www.genome.gov/pressDisplay.cfm?photoID=97>

Bacteria – NIH Image Bank:
<http://media.nih.gov/imagebank/display.aspx?ID=650>

Purple bacteria (*Staph aureus*) - Janice Haney Carr, image 11155 in the CDC Public Health Image Library: <http://phil.cdc.gov/phil/home.asp>

Tables – adapted from tables provided by the Genome Center

Illumina machine picture – from Illumina, Inc.

454 machine picture – from 454 Sequencing/Roche Diagnostics GmbH

Tables – adapted from tables provided by the Genome Center

Scene 2 – Illumina (with Cherilynn Shadding)

Illumina machine pictures (Cluster Generator and Genome Analyzer) – from Illumina, Inc.

Nebulizer picture – from Genome Center

Flowcell picture – from Illumina, Inc.

“Each piece has a unique sequence” picture – from Illumina, Inc.

“Millions of copies” picture – from Illumina, Inc.

“Millions of copies” and “Each cluster has a unique sequence” picture – from Illumina, Inc.

“G...C...T...G...A...” – adapted from Illumina, Inc.

Scene 3 – 454 (with Cherilynn Shadding)

454 machine picture - from 454 Sequencing/Roche Diagnostics GmbH

DNA helices - from 454 Sequencing/Roche Diagnostics GmbH

Tube illustration - from 454 Sequencing/Roche Diagnostics GmbH

Tube illustration with cross-section - from 454 Sequencing/Roche Diagnostics GmbH

Bead in microreactor - from 454 Sequencing/Roche Diagnostics GmbH

Tube illustration with cross-section - from 454 Sequencing/Roche Diagnostics GmbH

Tube illustration - from 454 Sequencing/Roche Diagnostics GmbH

Bead with DNA attached - from 454 Sequencing/Roche Diagnostics GmbH

454 machine picture - from 454 Sequencing/Roche Diagnostics GmbH

DNA beads going into picotiter plate - from 454 Sequencing/Roche Diagnostics GmbH

DNA beads with smaller beads in picotiter plate - from 454 Sequencing/Roche Diagnostics GmbH

Firefly picture – <http://www.flickr.com/photos/59888866@N00/3681642807> (Creative Commons License)

Flash of light on beads - from 454 Sequencing/Roche Diagnostics GmbH

Scene 4 – Conclusions and Applications (with Rick Wilson)

Corn – iStockphoto

Cat - iStockphoto

Sloth – iStockphoto

Alpaca – iStockphoto

Mosquito – James Gathany, image 6765 in the CDC Public Health Image Library:
<http://phil.cdc.gov/phil/home.asp>

Table – adapted from Genome Center table

Reference sequence, map SNPS – from Illumina, Inc.

RNA sequencing, cells or tissues picture - Breast Cancer image – Cecil Fox, NCI Visuals
Online: <http://visualsonline.cancer.gov/details.cfm?imageid=2289>

ChIP (Chromatin Immunoprecipitation), cells or tissues – Cecil Fox, NCI visuals online:
<http://visualsonline.cancer.gov/details.cfm?imageid=2303>

Pink bacteria on blue background (*Legionella pneumophila*) - Janice Haney Carr, image
11118 in the CDC Public Health Image Library: <http://phil.cdc.gov/phil/home.asp>

Pink fungi (*Trichophyton maritii*) - Arvind A. Padhye, image 3050 in the CDC Public Health
Image Library: <http://phil.cdc.gov/phil/home.asp>

Blue fungi (*Histoplasma capsulatum*) - Libero Ajello, image 10961 in the CDC Public Health
Image Library: <http://phil.cdc.gov/phil/home.asp>

Purple viruses (*Norovirus*)- Charles D. Humphrey, image 10708 in the CDC Public Health
Image Library: <http://phil.cdc.gov/phil/home.asp>

Yellow bacteria on green background (methicillin-resistant *Staphylococcus aureus*) - Janice
Haney Carr/ Jeff Hageman, image 10046 in the CDC Public Health Image Library:
<http://phil.cdc.gov/phil/home.asp>

Purple bacteria on gold background (*Mycobacterium fortuitum*) Janice Haney Carr, image
11033 in the CDC Public Health Image Library: <http://phil.cdc.gov/phil/home.asp>

Peach bacteria on a sea green background (Swine flu virus) - C. S. Goldsmith and A. Balish,
image 11214 in the CDC Public Health Image Library: <http://phil.cdc.gov/phil/home.asp>

Human microbiome diagram – adapted from NIH Medical Arts and Printing, NHGRI image gallery: <http://www.genome.gov/pressDisplay.cfm?photoID=20163>

Crohn's disease (abdomen with illustration of intestines, etc): image number N00704 from the National Institute of Diabetes and Digestive and Kidney Diseases Image Library: <http://www.catalog.niddk.nih.gov/ImageLibrary/detail.cfm?id=640>

Necrotizing enterocolitis (looks like an x-ray): From radswiki.net: http://radswiki.net/main/index.php?title=File:Necrotizing_enterocolitis_201.jpg

Fever of unknown origin (thermometer showing 100.1°F): <http://www.flickr.com/photos/denn/3912985/> (Creative Commons License)

World map with countries labeled in red: <http://en.wikipedia.org/wiki/File:BlankMap-World6.svg> (public domain)

World map with genetic variations: http://en.wikipedia.org/wiki/File:Genetic_Variation.jpg (Creative Commons License/GNU License)

Normal vs. cancer cells – Pat Kenny, image AV-9004-3728 at the National Cancer Institute Visuals Online: <http://visualsonline.cancer.gov/details.cfm?imageid=2512>

AML cancer cell slide – Lance Liotta lab, image AV-8803-3307 at the National Cancer Institute Visuals online: <http://visualsonline.cancer.gov/details.cfm?imageid=2336>