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

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Scene 1 – Introduction (with Elaine Mardis)

Chimp - iStockphoto


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


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

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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

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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 mariantii) - 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

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


