

# A Trip to the Nanoscale

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Holden Village

Summer 2009

How many increasingly small objects  
would fit on the head of a pin?

About 1 aphid

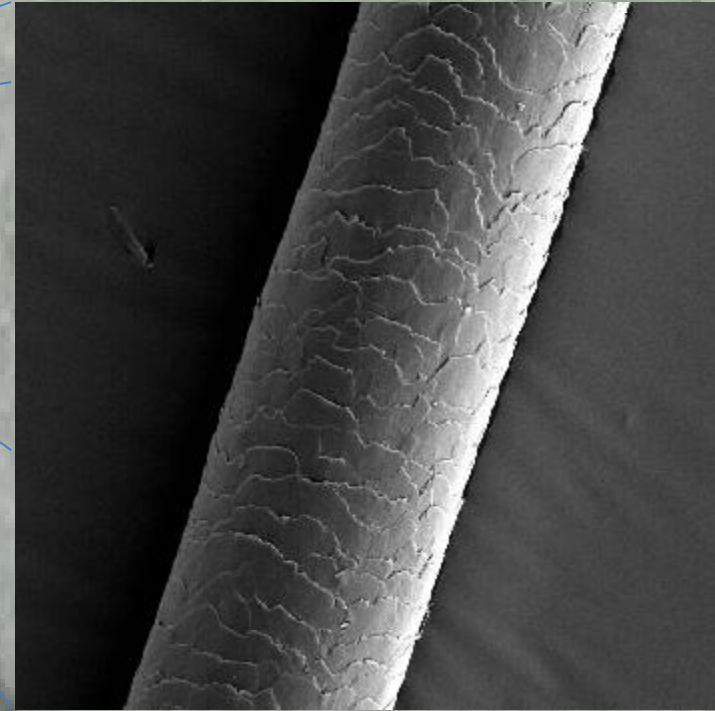


# Human Hair

100  $\mu\text{m}$  = 0.1 mm



About 20  
Human Hairs



50  $\mu\text{m}$  -- the limit of the unaided eye



# Pollen Grains

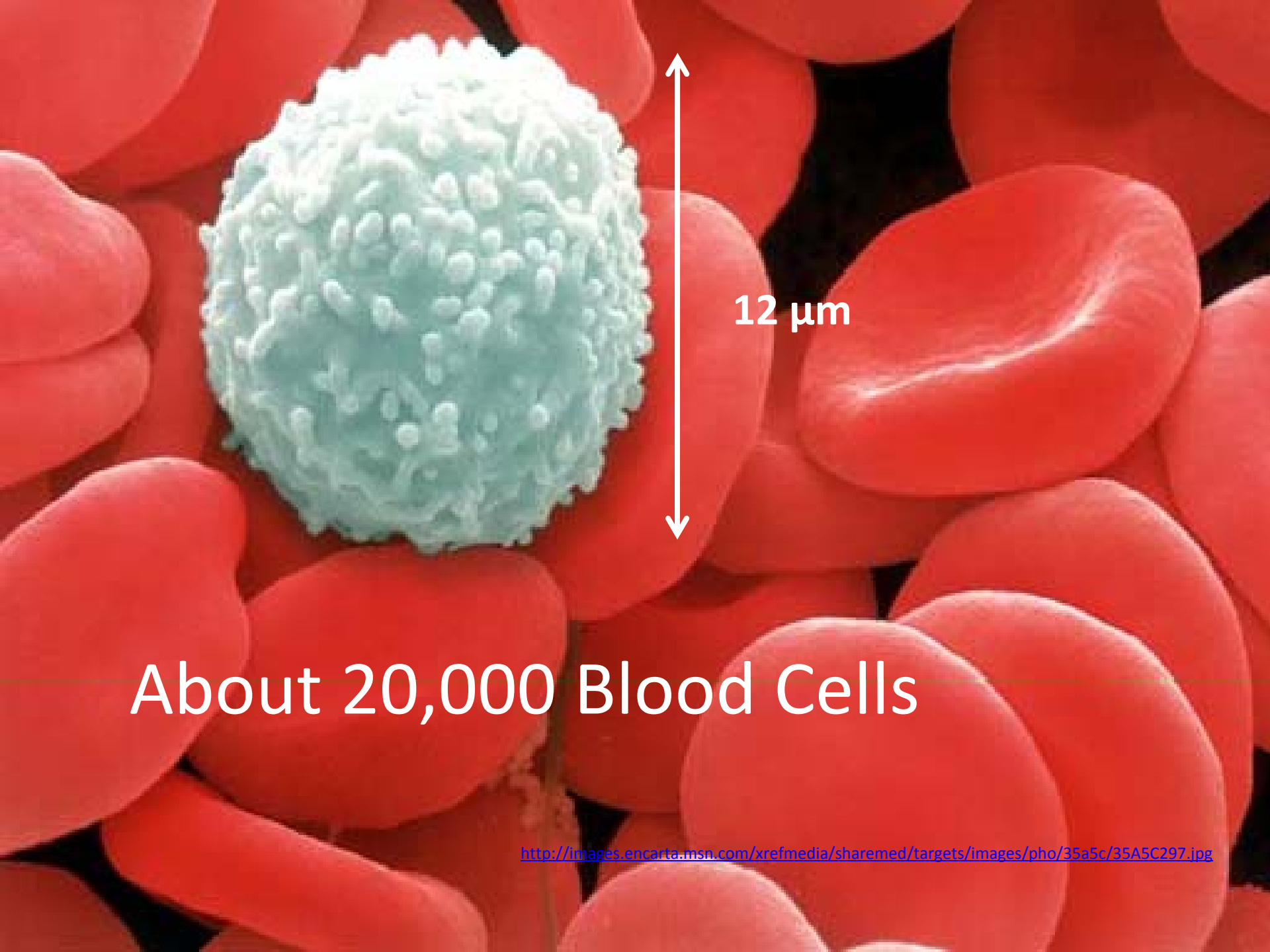
20  $\mu\text{m}$



About 8,000  
Pollen Grains

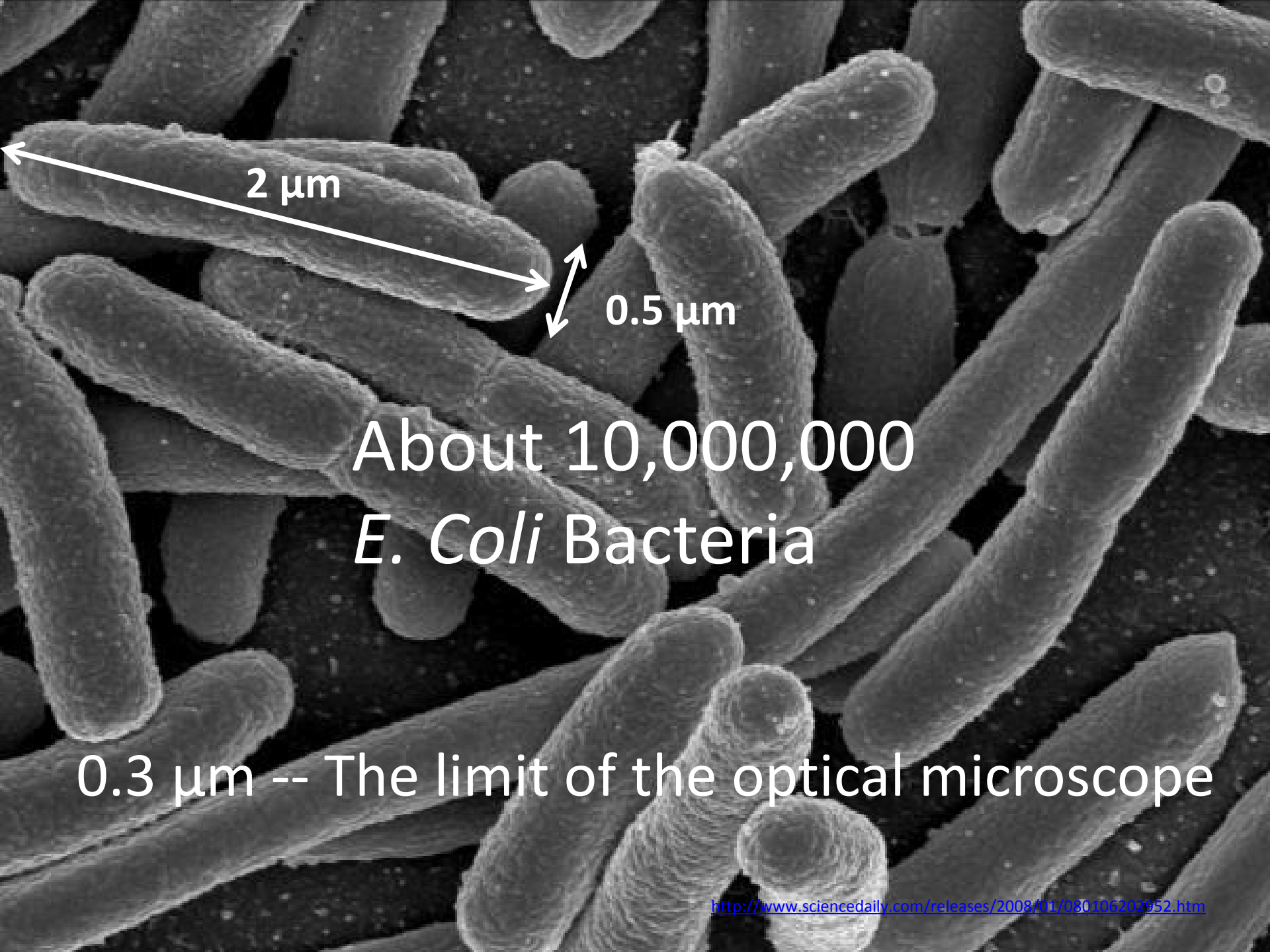


SCIENCEPHOTOLIBRARY



12  $\mu\text{m}$

About 20,000 Blood Cells



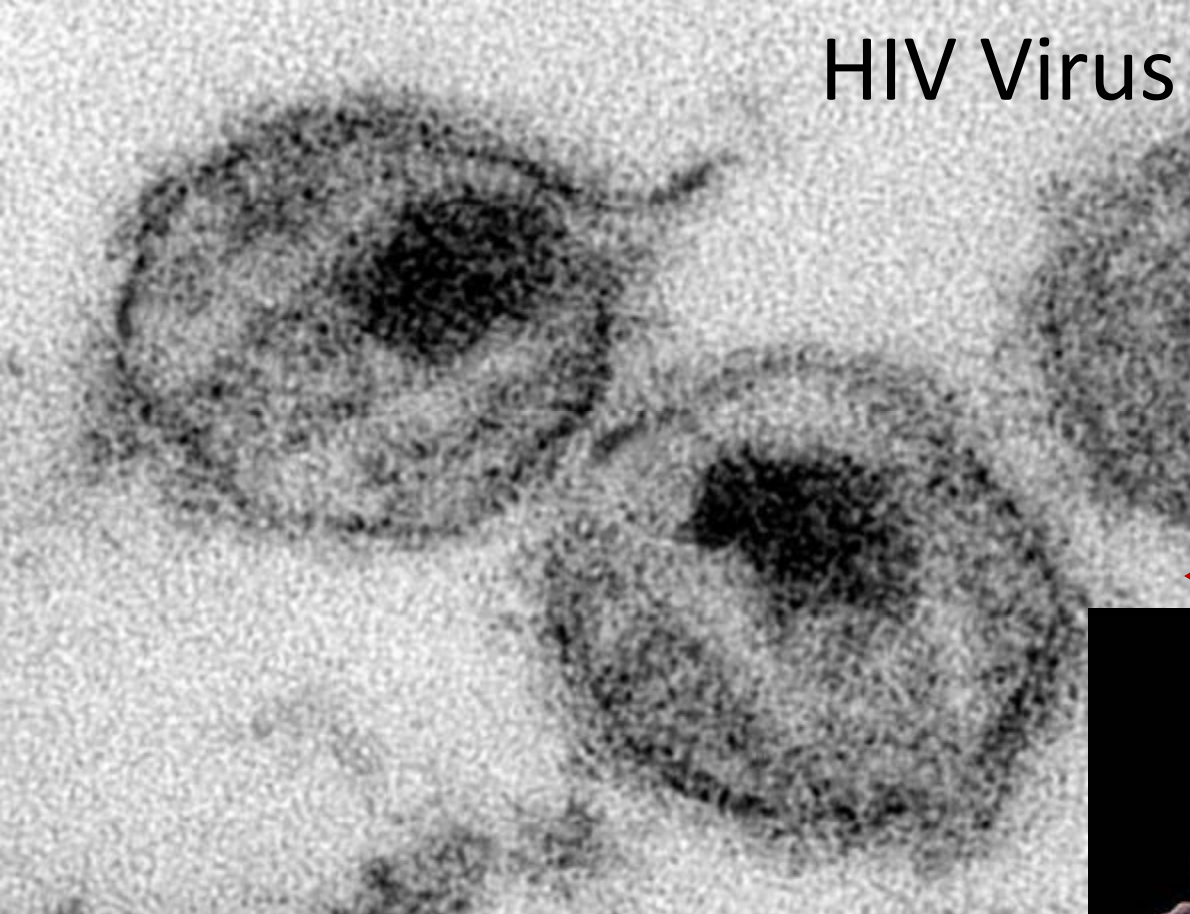
2  $\mu\text{m}$

0.5  $\mu\text{m}$

About 10,000,000  
*E. Coli* Bacteria

0.3  $\mu\text{m}$  -- The limit of the optical microscope

# HIV Virus

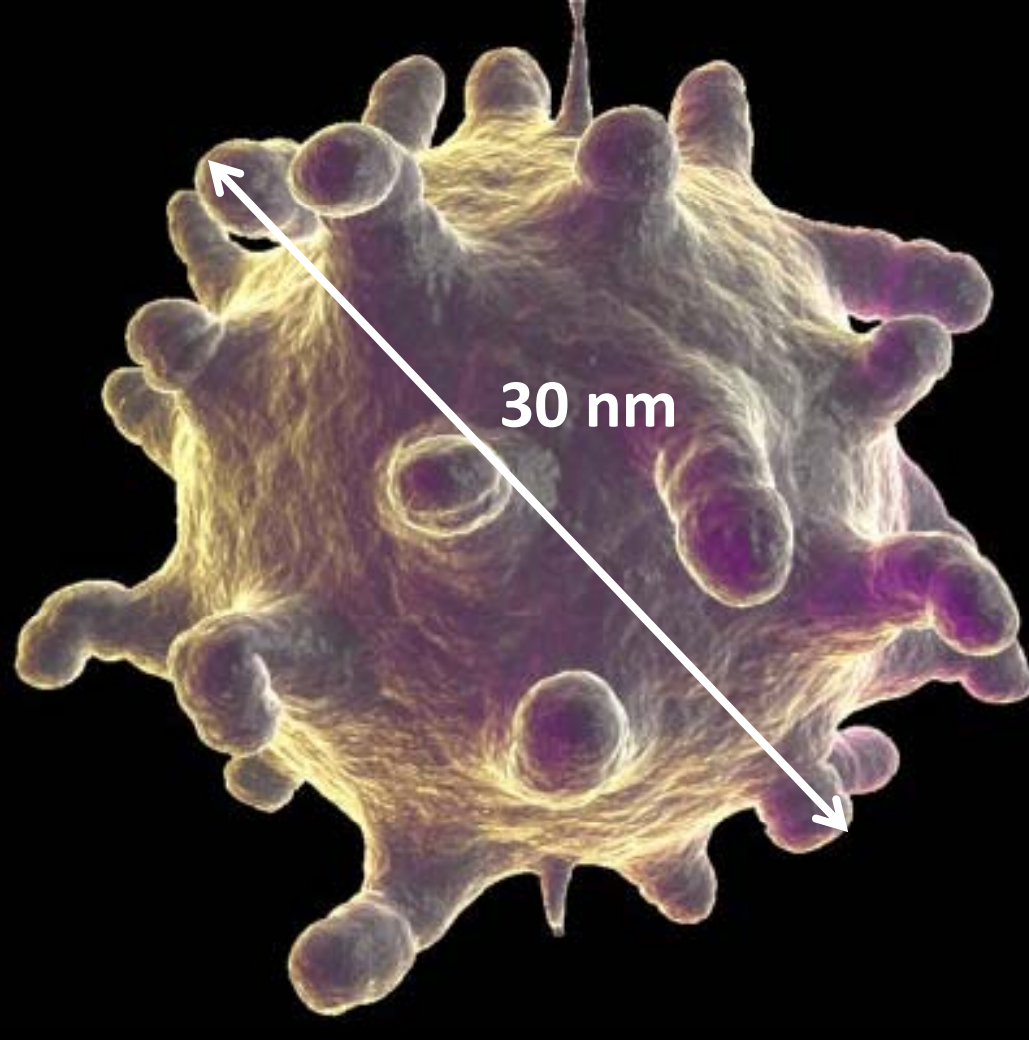


0.1  $\mu\text{m}$  = 100 nm



About 30,000,000  
HIV Virus Particles





Rhinovirus stuffed toy by Giant Microbes



Stomach Ache  
(Shigella)



Sore Throat  
(Streptococcus)



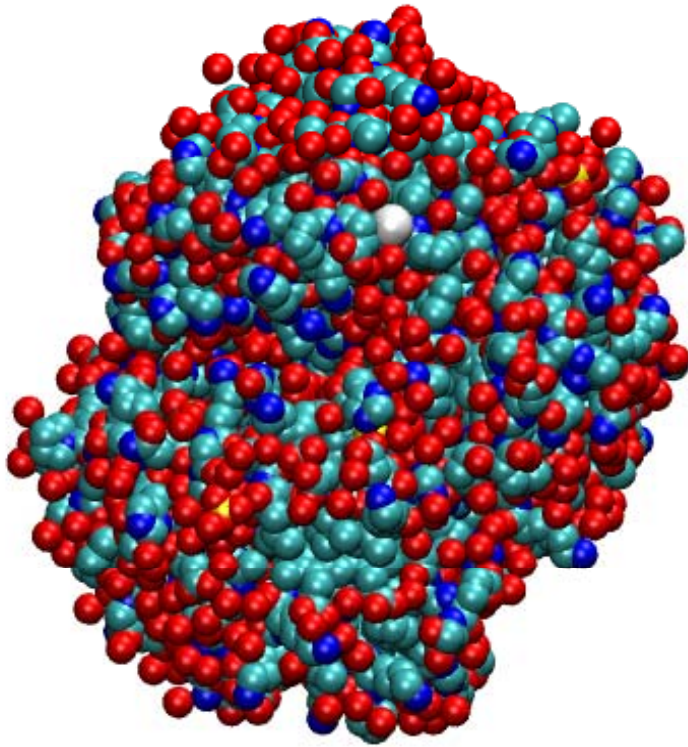
Cough  
(Bordetella  
Pertussis)



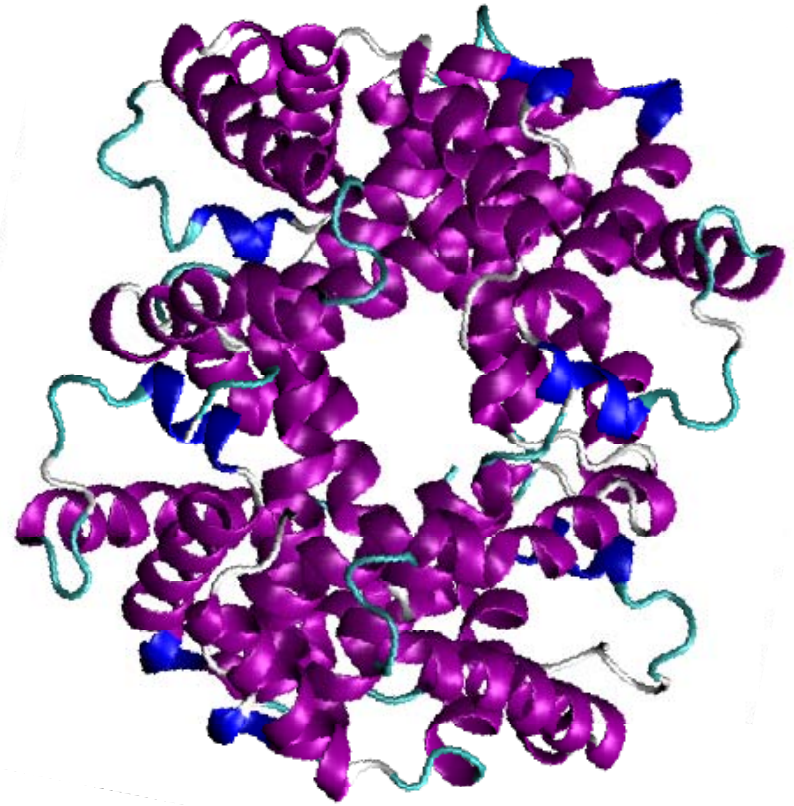
The Flu  
(Orthomyoxvirus)

About **3 Billion**  
Rhinovirus (Common Cold) Particles

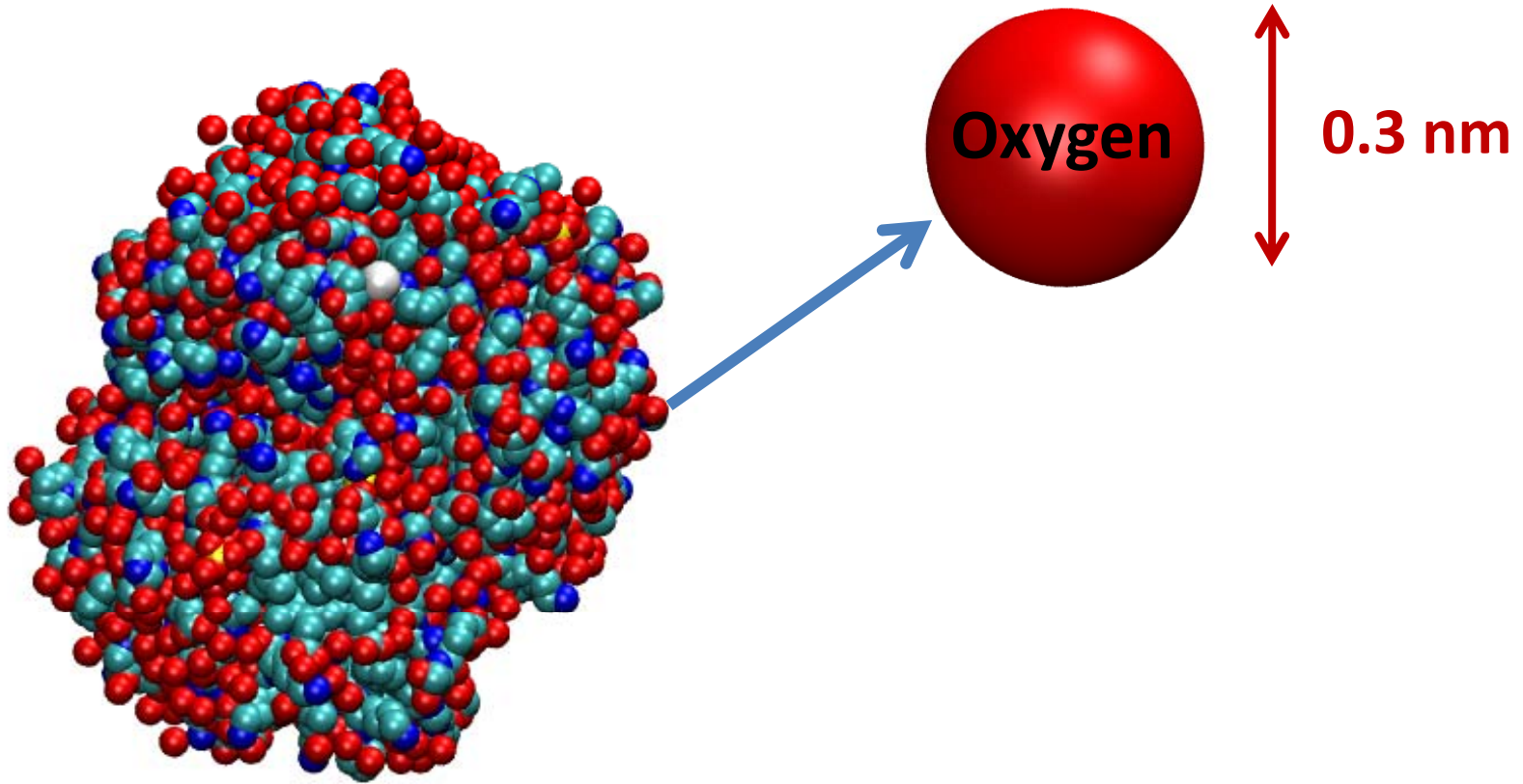
# Hemoglobin Protein



3 nm



About ***300 Billion*** Proteins



About ***30 Trillion*** Oxygen Atoms