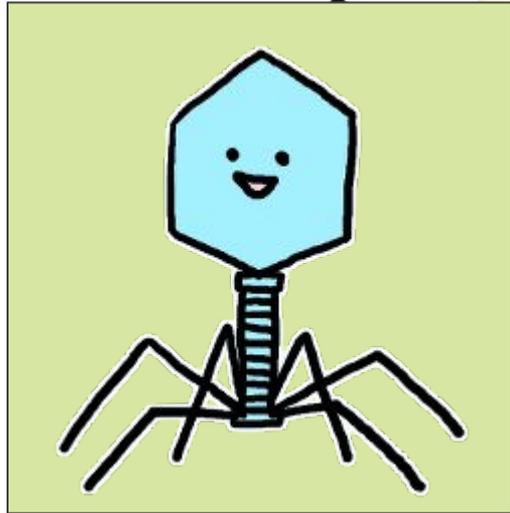




Phage Gallery

Noe Green and Samantha Sabbara

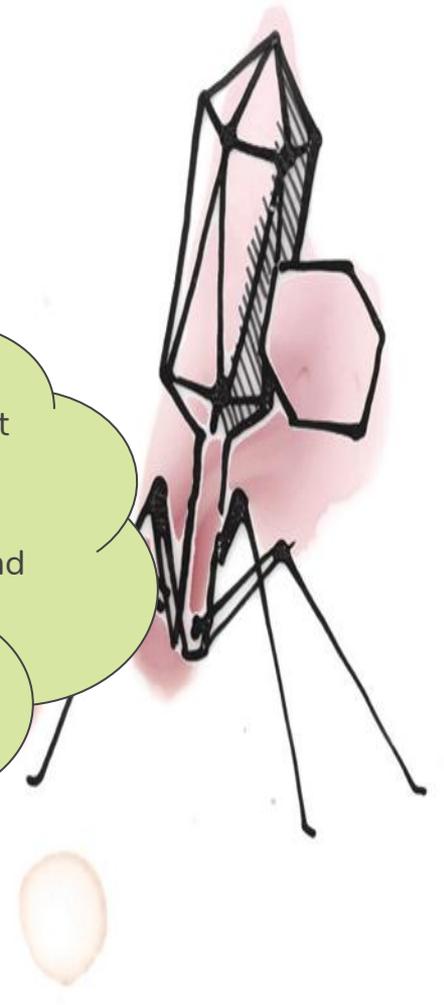
What is a Phage?



Bacteriophages are viruses that infect bacteria!

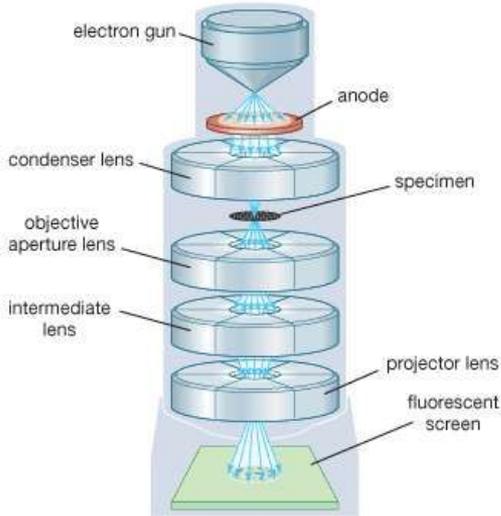
They come in all shapes and sizes and consist of many parts,

Most have a head, tail and tail fibers!



How do we get pictures of Phages?

Pictures of things as small as phages are taken on a transmission electron microscope (TEM)!



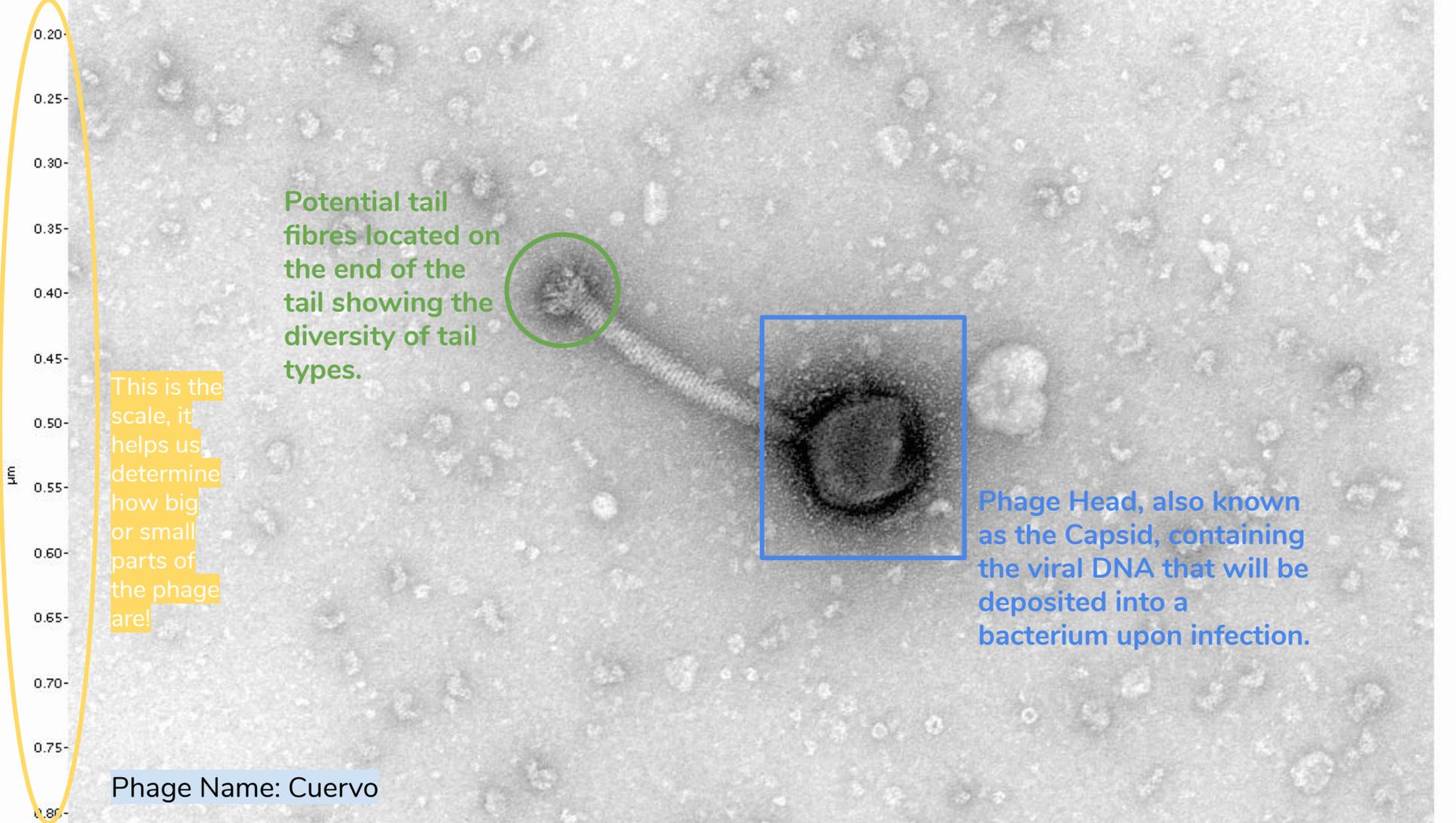
TEM images are taken by sending a beam of electrons through a specimen to create an image!

David Lowry at ASU helped conduct this procedure for us to prep the phage samples and use the microscope:



They help us see things our eyes can't on their own! They provide understanding to processes occurring on the microscopic level

Why are TEM images useful?

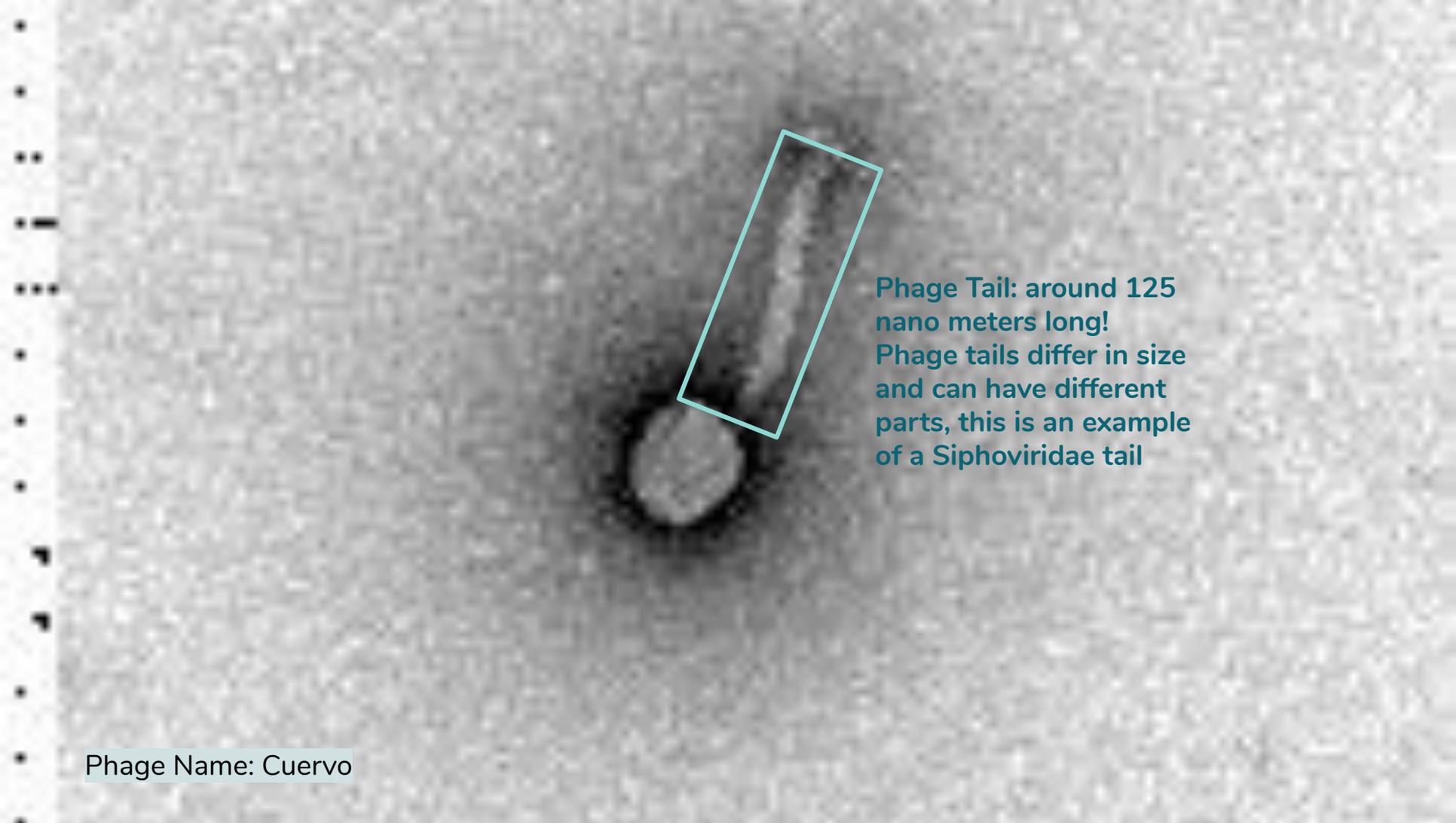


Potential tail fibres located on the end of the tail showing the diversity of tail types.

Phage Head, also known as the Capsid, containing the viral DNA that will be deposited into a bacterium upon infection.

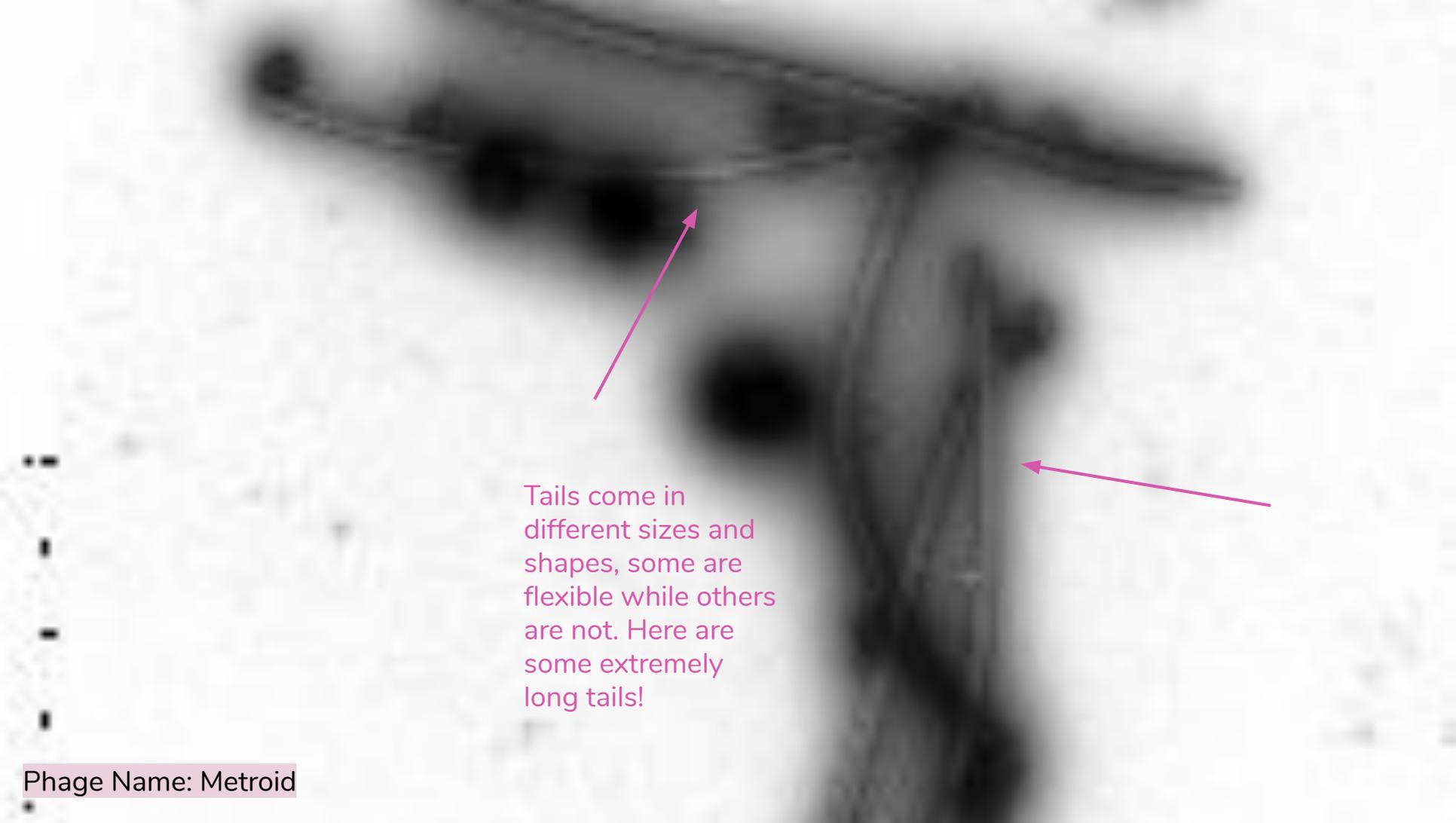
This is the scale, it helps us determine how big or small parts of the phage are!

Phage Name: Cuervo



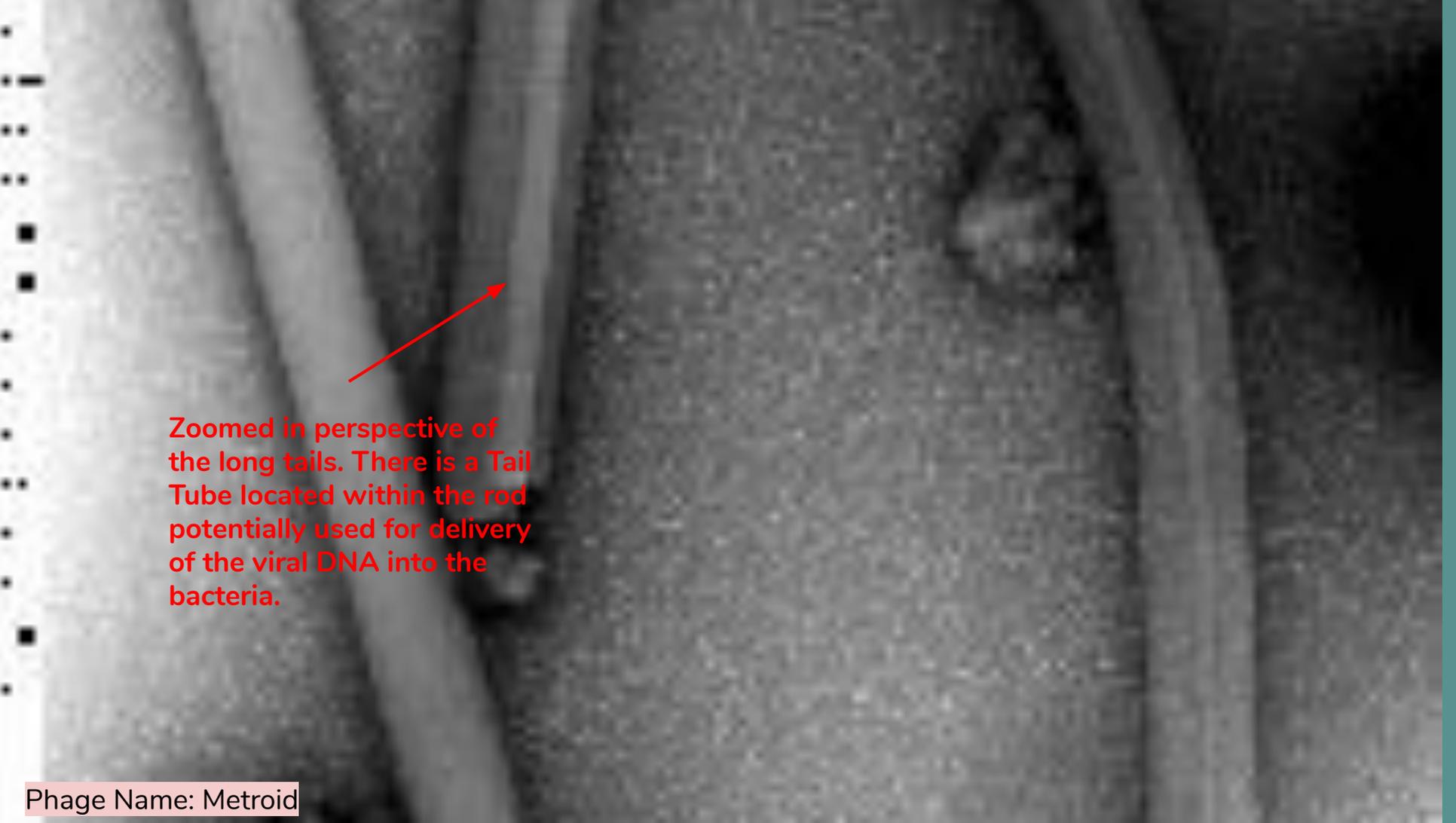
Phage Tail: around 125 nano meters long!
Phage tails differ in size and can have different parts, this is an example of a Siphoviridae tail

Phage Name: Cuervo



Tails come in different sizes and shapes, some are flexible while others are not. Here are some extremely long tails!

Phage Name: Metroid

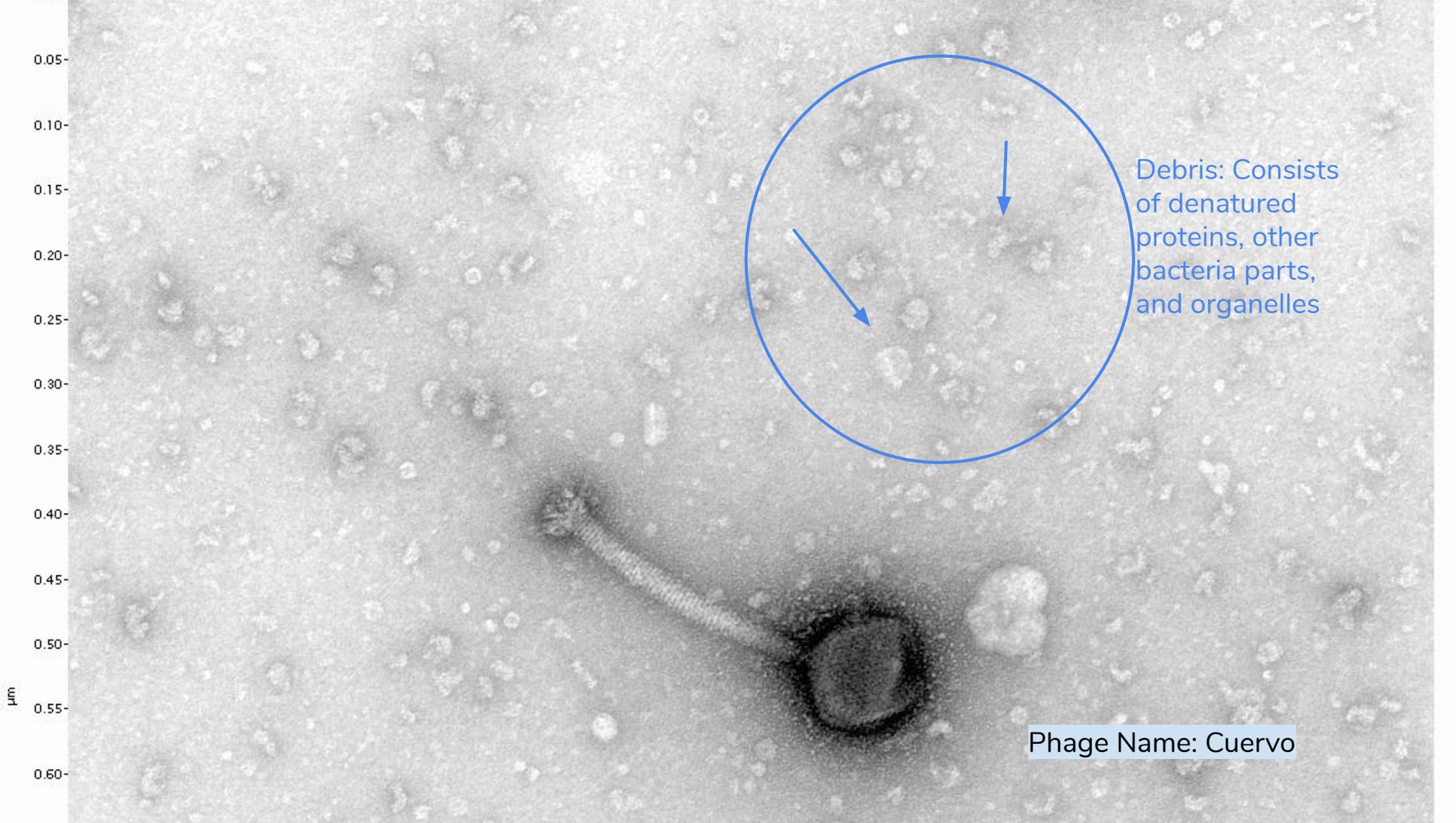
This is a grayscale electron micrograph showing several long, cylindrical phage tails. A red arrow points to a specific tail, highlighting a thin, central structure within it, which is the tail tube. The background is a grainy, dark gray texture.

Zoomed in perspective of the long tails. There is a Tail Tube located within the rod potentially used for delivery of the viral DNA into the bacteria.

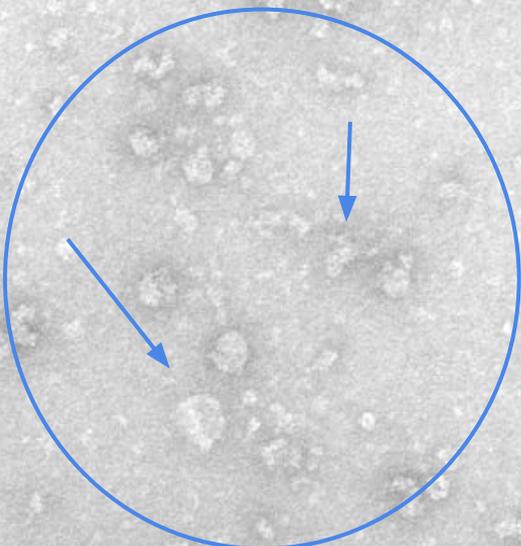
An electron micrograph showing a cluster of phages. The phages are arranged in a roughly circular pattern, with their tails pointing towards the center. The heads are visible as dark, rounded structures. The background is a light, grainy texture.

Phages also form clusters, they will connect tails together. Some clusters are big and some are small

Phage Name: Cuervo

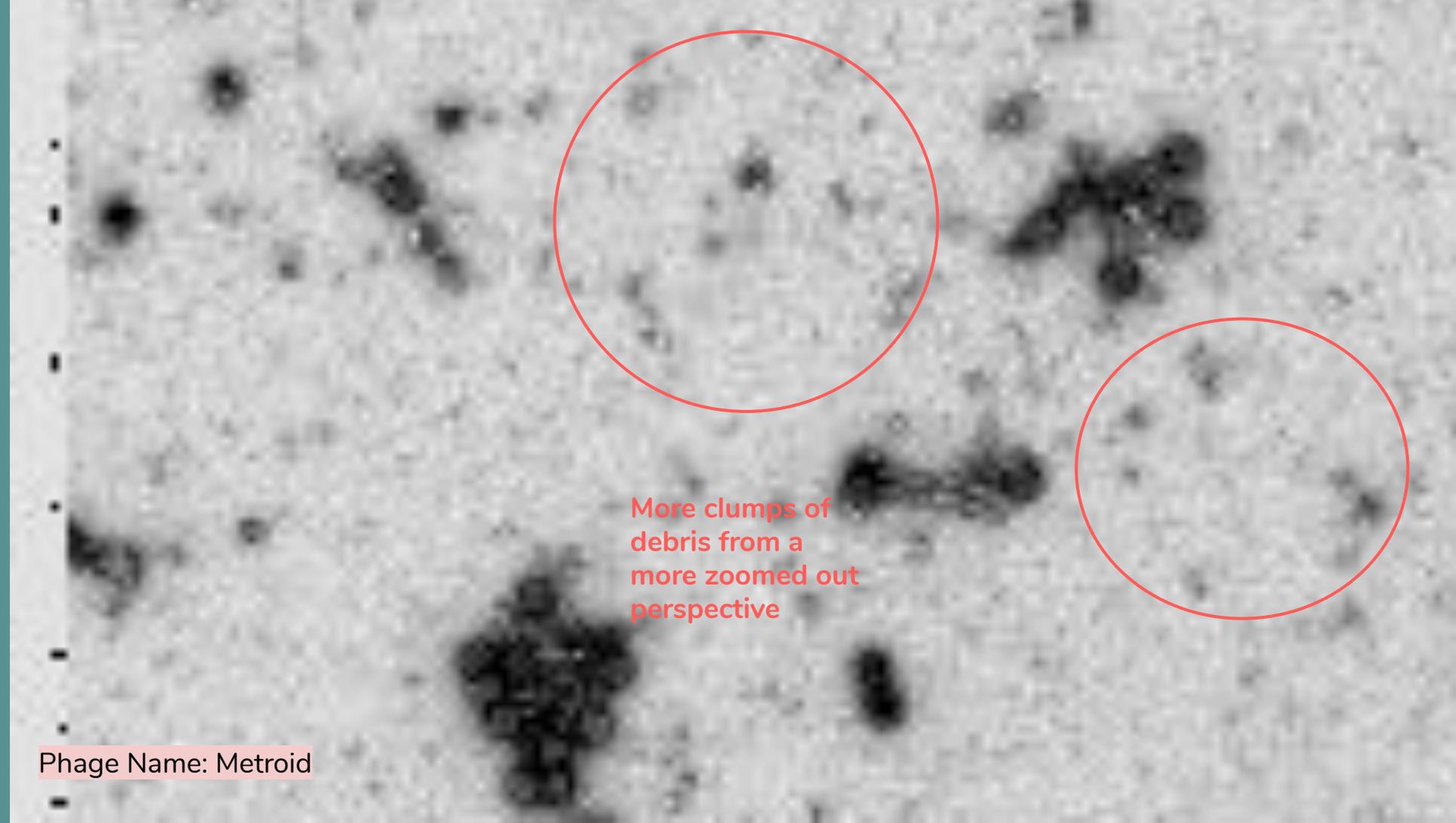


0.05-
0.10-
0.15-
0.20-
0.25-
0.30-
0.35-
0.40-
0.45-
0.50-
0.55-
0.60-
μm



Debris: Consists of denatured proteins, other bacteria parts, and organelles

Phage Name: Cuervo



More clumps of
debris from a
more zoomed out
perspective

Phage Name: Metroid

Why this project?

Putting a physical image along with a description and an explanation helps to reinforce the information and makes it easier to understand as opposed to having to come up with an image in your head.

We wanted something that would encourage young students to get excited about biology!

Why is it useful?

This gallery gives information about basic phage physiology, the components that make up a phage and some of their functions, and a small summary about what phages are.

What this will teach:

