

IBERS Microbiology: Pathogens Workshop Challenge and Resource Materials

Pathogens Workshop Challenge

Using the resources in the 'Resource Materials' area below as a starting point:

Find a plant pathogen, a veterinary pathogen and a human pathogen.

What types of microbes are they, what diseases do they cause, and where do they live when they aren't causing disease?

Resource Materials

Microbial Diversity

There are several major classes of microbes, including bacteria, viruses and fungi.

- Bacterial cells take many shapes
- And their colonies are also very varied

<https://microbiologyonline.org/index.php/about-microbiology/introducing-microbes/overview>

<https://microbiologyonline.org/index.php/about-microbiology/introducing-microbes/bacteria>

<https://www.sciencebuddies.org/science-fair-projects/references/interpreting-agar-plates>

Gram Staining

Gram staining is a quick method to distinguish between the two major classes of bacteria (Gram-negative and Gram-positive)

<http://www.wikihow.com/Gram-Stain>

Antimicrobials

Different antimicrobials affect different organisms through different mechanisms:

<https://www.healthline.com/health/how-do-antibiotics-work#resistance>

<https://www.newscientist.com/question/how-do-antibiotics-work/>

Microbes in the Environment

A series of articles which explore different aspects of microbes in the environment, including where microbes are found, how they move around, and consequences for human health.

<https://www.wired.com/2014/02/indoor-microbiome/#slide-1>

[Biogeography of a University of Campus](#)

<https://microbiomejournal.biomedcentral.com/articles/10.1186/s40168-015-0135-0>

Space stations and operating theatres:

<https://www.frontiersin.org/articles/10.3389/fmicb.2016.01573/full>

Fist Bumps, Cruise taps and handshakes:

https://journals.viamedica.pl/international_maritime_health/article/view/IMH.2016.0034/36943

Microbes in dust

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154131>

Ebola transmission

<https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0004852>