

VIDEO TRANSCRIPT

A Look inside the Lab: Safety Hoods – Video transcript

I work a lot in our laminar flow hood, it's also called a bio safety cabinet. So, laminar flow works where on the hood you have a grate system; what happens is it sucks air into the first grate and it actually funnels it underneath of where your workspace is and through a HEPA filter. After it flows through the filter it actually gets pushed down from the top of the hood onto the workspace, so the air once it's been filtered it's clean.

And so basically, you get this sort of cycle where on that workspace in between the grates you have a completely sterile environment. You shouldn't have any fungus or bacteria to contaminate whatever you're working with, and this is very important for having most of the things I do work - the medias that I work with - if I were to work with them in the open air, they would very quickly become contaminated by bacteria or fungus.

We also have an anaerobic chamber. An anaerobic chamber is used to grow bacteria that are sensitive to oxygen. Essentially oxygen causes these bacteria to die, and so we need an environment where there isn't oxygen present; we would not be able to study a lot of the bacteria that live inside our gut that are not exposed to oxygen without it because they simply wouldn't grow.

A chemical hood I also use, but I use it for a very different purpose. A chemical hood is set up to protect you, the person, from whatever you're working with, whereas a biological safety hood is set up to protect the samples from you and the environment.

There are a number of chemicals that I work with, like chloroform or formaldehyde, that if you inhale too many of them can be dangerous, and so I work with them in the chemical safety hood because it just sucks the vapors right up into that chimney so that they can't affect me and my body.

It's not a sterile environment; if I were to take cells in there they would probably get contaminated, because there's likely bacteria on those surfaces. And so, that is a huge difference is that I work with chemicals usually hazardous ones in the chemical hood whereas I'm working with biological matter in a laminar flow hood.

So, hoods are another thing that really allow us to work with things we wouldn't be able to work with. A lot of my cell culture would be really difficult to sustain without a sterile environment. I would have contamination a lot, I would waste a lot of time and money throwing away media, throwing away samples. And a chemical hood allows me to utilize properties of chemicals that I probably wouldn't be able to work with for prolonged periods of time without one.