Basic Laboratory Equipment Safety:
UV Light Source in Biological Safety Cabinets at UTIA

What is a Biological Safety Cabinet with a biocidal ultra-violet light source?

A **biological safety cabinet** is an enclosed, ventilated laboratory workspace for safely working with materials contaminated with (or potentially contaminated with) pathogens requiring a defined biosafety level.

What is the purpose of a biological safety cabinet?

The primary purpose of a biological safety cabinet is to serve as a means to protect the laboratory worker and the surrounding environment from pathogens.

The primary hazard that this General Laboratory Safety Training is focused on involves the use of the biocidal ultra-violet light source contained in the biological safety cabinets.

- Note: **The BioSafety Office, www.biosafety.utk.edu, should be contacted for training on specific use and purpose of biological safety cabinets at UTIA.**

Most newer biological safety cabinets have interlocks that prevent the exposure to ultra-violet radiation light sources; however, there are a few older models in use at UTIA that pose a risk of ultra-violet radiation exposure if used incorrectly. The ultraviolet radiation can cause damage to human tissue in the eyes and skin. Skin condition may include skin erythema (sunburn like condition) or elastosis (skin cancer). Hands, arms, face and eyes are the most likely sites of injury. Working unprotected for even a few minutes may cause injury and some individuals have greater than usual photosensitivity which can put them at a higher risk.

What are some basic safety considerations to be made and questions to ask before using a biological safety cabinet with a ultra-violet radiation light source at UTIA, especially the older models without safety interlocks?

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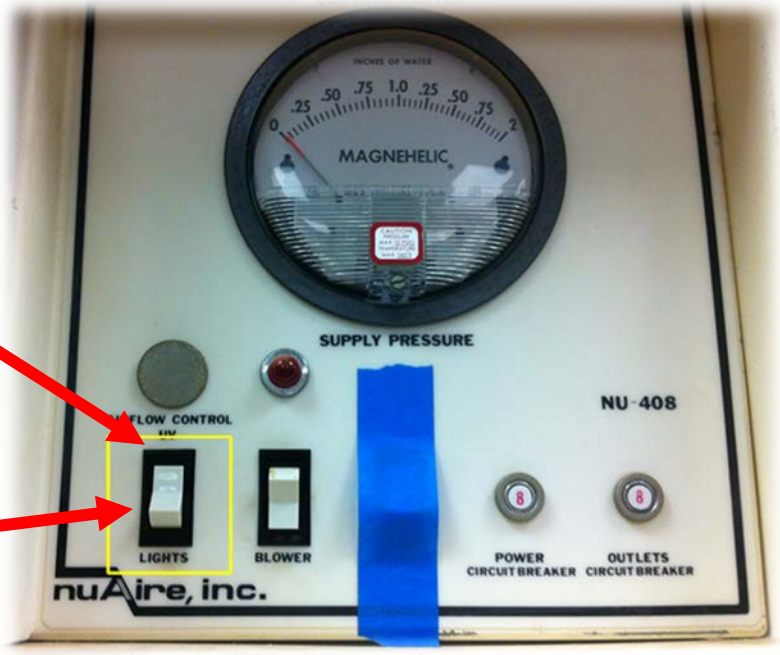
Is the UV light source switch turned on?

Several of the older models have a toggle switch that operates both the UV light source and the normal-use light source.

The UV Light Source is “ON” when toggle switch is depressed at the top

The UV Light Source is “OFF” if toggle switch is depressed at the bottom and turns on normal lighting



What does a UV light source look like when it is turned on?

The appearance of a UV light source is quite different than the normal “white” light used when doing routine activities in the hood that do not require a biocidal light source. Notice the blue lighting which indicates a UV light source has been activated.

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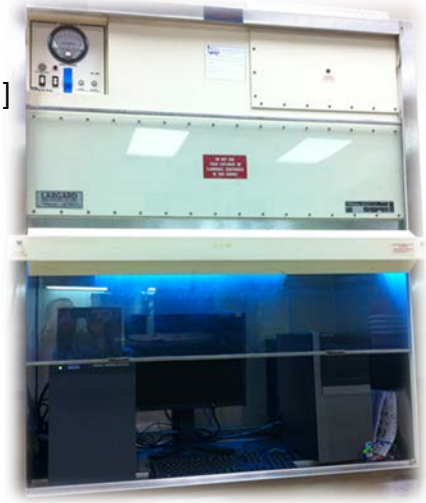

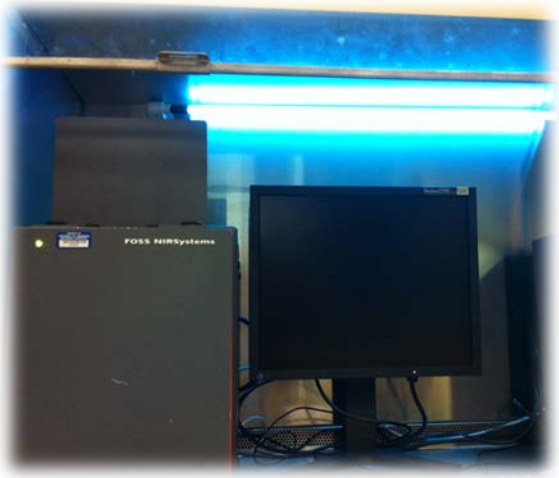

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Where is the UV light source inside some of the biological safety cabinets?