

Lehigh University Environmental Health and Safety Laboratory Newsletter

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Lehigh's New Laboratory Standard



A paradigm shift is occurring and it's smack in the middle of research and laboratory operations.

A **paradigm shift** is defined as "an important change that happens when the usual way of thinking about or doing something is replaced by a new and different way."

The New Expectation

The amount of research conducted at Lehigh is growing and will continue to grow in the next few years. The regulations that researchers must follow have also become more stringent. Regulatory officials such as the fire department have increased their inspections and their expectations for safely maintaining a laboratory.

There is an expectation that PIs, graduate students and staff will maintain laboratories in a clean and orderly manner at all times.

An expectation that chemicals will be limited to only what is needed to conduct the research. Flammable chemicals and non-flammable chemicals are not to be stored together. Flammable cabinets must meet the definition of a proper flammable cabinet. Acids and bases are to be stored separately. Chemicals are to be put away daily after use.

Flammable gases can no longer be used without proper ventilation and gas monitoring. Garbage must be removed when full or at the end of the day.



This hydrogen generator can produce high purity hydrogen gas using DI water. It can eliminate the need for a gas cylinder, ventilation and a gas monitoring system in the lab.

Reducing the Laboratory Foot Print

Compressed gas use should be minimized when possible. Often compressed gases are left in labs for years without use.

Flammable gases such as hydrogen should be replaced with a hydrogen generator as shown above. Nitrogen generators are also available further reducing the need for compressed gas cylinders.

When ordering chemicals, PIs must only order the minimal amount for use for the experimental process. It is no longer acceptable to purchase bulk amounts of chemicals and storing the remaining amount. This is especially true for hazardous chemicals that require special storage such as picric acid or hydrofluoric acid. Chemicals with such hazardous properties will be removed if found in large quantities or improperly stored.



PIs should go through their lab and reduce the amount of chemicals in storage. Many chemicals including reagents only have a chemical life of 2-3 years. A list of chemical reagents and their shelf life can be found at:

<https://lamotte.com/support/product-documentation/reagent-shelf-life/>