

# KEEPING YOU (AND FRUIT FLIES) SAFE IN THE LAB

By Ron Hartung

**T**he most provocative sign you'll find in the College of Medicine's Thrasher Building may be "No Food or Drink in Classroom." Yawn. Next door, though, in the medical school's Research Building, is a collection of signs that are alternately sobering and mystifying.

Here to help decode them is Myra Hurt, senior associate dean for research and graduate programs.

## 'BIOHAZARDOUS AREA'

One place you'll see this sign is outside the cell culture room. "We culture human cells," Hurt said. "We culture hamster cells. But the thing in that facility that we are really careful about is a derivative of something called an adenovirus. It's a DNA virus, and DNA viruses kind of freak people out. They have the possibility of integrating into DNA if they get into your cells."

Researchers like the adenovirus because it helps them move genes from one place to another. "People think about using 'gene transfer' to cure diseases and so forth, but it's also a way to get a gene that you want into a cell to study the effect on the cell," she said. "These are modified viruses that are not capable of doing the things that a virus in nature is capable of, but we consider them to be somewhat biohazardous."

The sign is posted so you won't go in there and eat, for example. "In truth," she said, "it's probably completely safe. But this is why I've been at this for almost 40 years and I have no ill effects. You treat everything with the maximum precaution that you think it deserves."

## 'CAUTION: RADIOACTIVE MATERIALS'

Researchers often use radioactive material to label DNA or RNA or whatever molecule is being studied. In the small



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amounts they use, it's not harmful to humans if it's used properly. In the room where it's being used or stored, Hurt said, "you put that sign up so that people who don't need to be in there will keep out. That way you stay out of trouble."

## 'DO NOT WAX THIS ROOM'

This inscrutable sign hangs outside a room where a high-resolution, laser-fired microscope can view such marvels as fluorescent-tagged antibodies. Seemingly innocuous floor wax poses two challenges, Hurt said:

- Volatile chemicals. "If you look under your sink," she said, "you've got more stuff that's unsafe than probably a lot of stuff that's on our shelves in the lab."
- Buffing the floor, which produces airborne particles.

The combination of the two, she said, can produce a sort of glue that gums up the works of this sophisticated machine, which sells for as much as \$400,000. So, hold the wax.

## 'NO PESTICIDES!' (WRITTEN IN ENGLISH AND SPANISH)

You see this sign outside the lab of Tim Megraw, who does research using fruit flies. Get the picture? "He may have as many as several thousand genetic strains of fruit flies that he keeps alive in his lab," Hurt said. Bug spray? Disaster.

## 'REMOVE GLOVES BEFORE ENTERING AND EXITING'

First, why are all the lab doors closed? "The air in that building is exchanged numerous times per minute," Hurt said. That's to meet OSHA standards, keeping organic chemicals from reaching a concentration that might be harmful to humans. That system can't work properly if lab doors are open.

A closed door means someone has to touch the doorknob. If the people in the lab have been trained correctly, she said, they shouldn't have anything on their gloves. But let's say there was a leak. Something got on a glove. Now that glove has touched the doorknob. Then someone else touches it – and moments later grabs his sandwich in the break room. That's why, she said, you don't want people who've been using their gloves in the lab to touch common surfaces.

Florida State makes sure that labs follow these rules. "Environmental Health and Safety from the university comes around regularly, and they swab surfaces everywhere," she said. "Then they put them in a very sensitive radiation counter. If they find anything, they can shut your lab down."

She said it's her job to tell her students in her lab, "We take this very seriously. This is not funny. If I walk in here and I see you doing something unsafe, you can kiss it goodbye."