The purpose of this newsletter is to keep radioactive material users at UC Irvine informed regarding campus radiation safety policies and procedures including tips to improve safety. Visit the EH&S website (www.ehs.uci.edu) under “Radiation & Laser Safety” for previous issues of this newsletter and more information on radiation safety.

AUTHORIZED RADIOISOTOPE LABORATORIES

The only rooms in which you may work with radioisotopes are the approved locations listed on your Principal Investigator’s Radiation Use Authorization. If your research group takes over new lab space, or needs to move radioisotope work into existing rooms under the control of your Principal Investigator but not currently listed on the RUA, then contact EH&S Radiation Safety at 949-824-6200 and the RUA can be amended to include the new locations.

Keep in mind that:

- The doors to all rooms in which radioisotopes are used or stored must be posted with a “Caution, Radioactive Material” label.
- Radioisotopes may not be used or stored in office spaces.
- In some cases, it is permissible for rooms to be shared by 2 or more Principal Investigators (this is common for scintillation counting rooms, cold rooms, and equipment rooms containing large centrifuges, etc.). The rooms need to be listed as approved locations on the RUAs for all of the Principal Investigators who use those rooms for radioisotope applications.
ABSORBENT PLASTIC-BACKED PAPER

All work surfaces used for radioisotope work must be covered with plastic-backed absorbent paper, sometimes referred to as “diaper paper” or lab soaker paper. This material has an absorbent paper surface on one side and a plastic surface on the other side -- or plastic in the middle between two absorbent paper surfaces. The purpose of this material is to provide a surface that is easily decontaminated -- by simply changing the paper if it gets significantly contaminated.

If you are using the white material that has paper on one side and plastic on the other side, make sure the paper side is always on top. The goal is for spilled liquids to be absorbed into the paper side while the plastic side below protects the underlying surface (bench top). If the plastic side is up, the liquids would bead up on the surface and would not be absorbed.

Be sure to check the paper with a radiation safety survey meter after every radioisotope experiment, and if the paper is contaminated, change it. Place the contaminated paper into a dry radioactive waste box. Note: The beta particles emitted by H-3 are of such low energy that they cannot be detected with a radiation survey meter. Swipe tests are needed to detect H-3 contamination.

NO RADIOISOTOPES IN LAB SINKS!

Never dispose of radioisotopes down a sink drain! The Irvine Ranch Water District reclams waste water used on campus and uses it to irrigate community areas such as greenbelts.

When decontaminating lab items like glassware, always pour the first two washes into a radioactive liquid waste container. Subsequent washes may go down the sink drain, unless it is expected that a sizable quantity of radioisotope would still be present in the third wash. Only washes that are expected to contain very low quantities of radioisotope may go down the drain. It is best to check a milliliter aliquot of the third wash using a liquid scintillation counter to ensure that the radioactivity level is less than 100 counts per minute before disposing of that wash down the sink.
MEMORABLE QUOTE

"Science is a wonderful thing if one does not have to earn one’s living at it."

Albert Einstein (1879 - 1955), German/American Physicist

SECURITY INVOLVING RADIOISOTOPES

Rooms in which radioisotopes are stored must be locked whenever they are not occupied except for very brief absences (such as while using the restroom).

If radioisotopes are stored in large multi-user laboratories (e.g., in laboratories in Natural Sciences I and II, and the Gillespie Neurosciences Research Center), then they should be further secured in non-removable (physically secured) storage containers like locked refrigerators or freezers, or locked cabinets or drawers. Alternatively, they can be stored in other rooms under the sole control of your Principal Investigator.

Radioactive materials must never be left unattended in unsecured locations such as hallways, loading docks, etc.

If you have any questions about radiation safety, please contact EH&S at 949-824-6200. We will be happy to assist you with any radiation safety-related matter!