

CLOSE ENCOUNTERS OF THE LAB KIND

THE SANTAYANA REPORT

George Santayana was a Spanish-American philosopher, essayist, poet, and novelist who penned the famous aphorism “**those who cannot remember the past are condemned to repeat it.**” The following is a summary of a recent incident at Columbia University. The information presented is intended to provide awareness and help readers plan against the occurrence of a similar situation in their laboratory or work area.

Split-Second Decision

Fluorine-18 (F-18) is a commonly used radioactive tracer for in-vivo neurological and metabolic studies. It decays by emitting a positron which annihilates in a split second when it encounters an electron resulting in the creation of a pair of photons that travel in opposite directions. Recently, a researcher used a cart to transfer liquid containing 40mCi of F-18 labeled compound from his laboratory to a collaborating laboratory in another building. His cart rolled over a recessed floor drain and tipped over. The glass vial holding the radioactive compound fell out of the cart and shattered on the floor of a common hallway. Worried about the rapid radioactive decay of the F-18 compound, he left the spill site in haste to retrieve more of the compound from his laboratory for the receiving users. Because his shoes were contaminated in the spill, he inadvertently spread the contamination as his footprints covered an area of about 2000 ft² as he traveled from the scene.



Lessons Learned:

- In the span of a few months, EH&S responded to two major spills due to liquid hazardous materials being improperly transferred on carts with no side panels.
 - When transferring any hazardous materials on a cart, ALWAYS use a cart with side panels.

Anytime a radioactive spill occurs outside of the laboratory –

- Call Public Safety to isolate the area from traffic and prevent spreading of contamination
- Call Radiation Safety at (212)305-0303 to report the spill and request assistance with radiation survey and decontamination
- Treat any injuries first before decontamination
- Perform a radiation survey with an appropriate detector to check for contamination on skin, clothing and shoes
- Skin contamination can be removed by washing the skin under running water with soap
- Contaminated clothing and shoes should be removed before leaving the spill site and marked as radioactive

Lab Action Items:

- Do not order, transfer, or store more hazardous materials than needed
- When transferring hazardous materials –
 - Use containers with tops that can be tightly sealed
 - Use a cart with side panels
 - Line bottom of cart with absorbent materials
- Wear personal protective equipment and do not rush when working with hazardous materials
- After handling liquid high-energy radioactive materials, survey hands and body in an area with low background radiation levels to check for contamination
- Prior to the transfer of radioactive materials, submit a request to Radiation Safety at rs0-ehrs@columbia.edu for review and approval

For further information, or to view previous Santayana Reports, please visit our [lessons learned website](#).

For any other safety related matte