A. Purpose:

Radioactive materials used for research purposes should be discarded through Environmental Health and Safety (EH&S). Radioactive wastes must be segregated by principal investigator (PI), isotope, and type of radioactive waste.

B. Applicability/scope

This policy applies to all radioactive materials used for laboratory research purposes in laboratories, areas, facilities or department under the jurisdiction of Columbia University Radiation Safety Office.

C. Definitions

- EH&S – Environmental Health & Safety
- PI – Principal investigator

D. Procedures

1. Waste should be segregated
   a. By PI
      Radioactive isotope usage is tracked by PI. Therefore, in common-use rooms, radioactive wastes must be kept separated from other PI’s wastes, even if they are of the same type.
   b. By Half-life
      - Long-lived isotopes (ex. H-3 and C-14) may be consolidated in the same collection container provided they are the same type of waste and generated under the same PI. Please consult EH&S for guidance regarding other long-lived isotopes.
      - Short-lived isotopes, including any material with a half-life less than 90 days, must be:
        o Separated from each other whenever possible
        o Segregated from long-lived isotopes
        o Held for decay-in-storage by the lab or EH&S. After decay and clearance, all radioactive labels and markings must be completely defaced or removed prior to disposal in the waste collection container.
      - Isotopes with very short half-lives (i.e., < 7 days) can be held for decay in the laboratory if space is available.
        o A log with collection dates, activities, and isotopes must be maintained by the lab.
        o EH&S can provide space for decay-in-storage upon request, if necessary. Please submit a radioactive waste pickup request.
        o The waste material should be held until the dose rate reading on contact is equal to background. The reading must be the same as the background level and all results must be recorded.
        o After decay, the waste will be disposed of as non-radioactive waste through EH&S. All radioactive labels must be removed or destroyed before discarding the
items. Final clearance must be completed by EH&S, please email rsoresearch@columbia.edu to request service.

c. By Radioactive Waste Type
Every effort must be made to minimize waste volumes. Accordingly, each type of radioactive waste must be separated. Animal/biological, beta plates/96-well plates, dry solid waste, liquid scintillation vials, liquid waste must be separated from each other. Please see the following guidelines for disposal of several common radioactive waste streams.

- **Animal / Biological**
- **Beta Plates/96-well plates**
- **Dry Solid Waste**
- **Liquid Scintillation Vials (LSV)**
- **Liquid Waste**
- **Radiation Shielding**

*Smoke Detectors and Exit Signs Disposal*

Please refer the EH&S Health & Safety manual section 4.5 for additional information.

E. Responsibilities

- PIs and/or laboratory personnel are responsible for proper segregation and labeling of radioactive waste in accordance with the guidance provided above and to request disposal in a timely manner
- Radiation Safety personnel will pick up the waste in response to a request

F. Emergency contact

- CUMC – 212-305-0303

G. Medical Surveillance

N/A

H. Recordkeeping

Laboratories must maintain records of all radioactive waste held for decay in storage and/or turned over to EH&S for disposal.

I. Appendices
J. Forms

N/A

K. References

N/A

L. Acknowledgements

N/A