

4. In the table below, provide information about each individual who will be working with radioactive material under this authorization

Note: Every individual working with radioactive material, including authorized users, must attend the RSC Radiation Safety Orientation Course within three months after starting work and at least once every two years thereafter.

Complete Name	Employee or enrolled student? y/n	Date of Birth	University Job Classification	Date completed RCS Orientation

5. In the space below, list each physical place where radioactive material will be used or stored under this authorization. Include building name, room number(s) and room use (i.e., hot lab, counting room, storage only, etc).

Building name	Room number	Room use

6. In the space below, describe your proposed use of radioactive materials. Be as detailed as possible. Include a description of any special procedures, which you and your staff will follow to ensure the safe use of radioactive material under this authorization.

Note: you will be asked to detail your general radiation safety program in section 15 of this application. If you prefer, you may combine the two sections as an overall Standard Operating Procedures section since you will need an SOP on file for your new hires to review prior to the first use of radioisotopes.

7. Do you intend to transfer radioactive material procured under this authorization to other authorized users within the University of Montana-Missoula or to individuals outside The University? Yes No

If you answered yes, provide complete information on each anticipated recipient.

8. Will radioactive materials be administered to live animals under this authorization? Yes No

If yes, attach an approved Institutional Animal Care and Use Committee protocol. You may contact the Laboratory Animal Resources Director at 243-5790 for details.

9. Complete this section if iodinations will be performed under this authorization or if any container of a radioiodinated compound possessed under this authorization will contain five millicuries or greater of the isotope.

- a. Radionuclide(s) involved:
- b. Maximum activity that will be present in any container:
- c. Chemical form (sodium iodide, iodinated protein, etc.):
- d. Location (building and room number) of fume hood where iodinations will be performed or where any container holding five millicuries or more of any radioiodinated substance will be used or stored:
- e. If you will perform iodinations, provide a brief description of the procedure that you will follow including an estimate of the tagging efficiency you expect to achieve:
- f. List every individual who will be performing iodinations under this authorization or who will be handling any container with five or more millicuries of any radioiodinated substance:

- 10 Complete this section if you will work with either 100 millicuries or more of tritium as tritiated water and/or sodium borohydride OR 25 millicuries or more of organically bound tritium.

- a. Chemical form:
- b. Maximum activity that will be present in any container at one time (mCi):
- c. Location of fume hood where work involving tritium above the levels specified will be performed:
- d. Attach a description of the procedures you will follow to ensure that any spill of radioactive material is promptly detected and that appropriate steps are taken to prevent the spread of contamination:

- e. List each individual who will be handling any container with tritium at or above the levels listed above:

Name:

Name:

Name:

11. Complete this section if work will be done under this authorization involving P-32

- a. Maximum activity that will be present in stock solution (mCi):
- b. Maximum activity that will be present in any container other than stock solution (mCi):
- c. Provide a description of the procedure you will follow for manipulating P-32 so as to minimize exposures from P-32 to the eyes and whole body of any individual:
- d. Provide a description of any shielding that will be provided to minimize exposures from P-32 while in storage, while in use and as waste material awaiting disposal:
- e. List each individual who will be handling 0.1 millicurie of P-32 at any one time.

Name:

Name:

Name:

12 If sealed and/or plated sources will be fabricated under this authorization, describe the procedure you will use, and what leak test method you will employ to ensure source integrity:

13 If you will use commercially available sealed sources, list each source including manufacturer, model number, isotope, activity, calibration date and location of the sealed source.

Note: if the required information is not available at the time of application, provide a general description which can be followed by the specifics as soon as you know them.

14 If you will use a gas chromatograph containing radioactive material, list each source including manufacturer, model number, isotope, activity, calibration date and location of the sealed source.

Note: if the required information is not available at the time of application, provide a general description which can be followed by the specifics as soon as you know them.

15 General Radiation Safety Program

Training for authorized users and their staff is outlined below. Our program requires that each new hire must receive training prior to the first use of radioactive materials and that the training be documented. Normally this is done by the authorized user providing specific information about the isotopes and procedures used in his/her lab. Within 90 days of the first use of radioactive materials, the RSO or the RSC chairperson will also provide the **Radiation Safety Orientation Course** as outlined below.

The person in charge of each teaching laboratory or research project shall compile an appropriate set of "Standard Operating Procedures" for its use of radioactive materials. As appropriate to your work, address points 1-8 below. These must be approved by the Radiation Safety Committee as part of the Authorized User Application and be reasonably available in the laboratory. They shall be filed in or with the Radiation Safety Manual. In addition, specific, clear and detailed procedures shall be provided for the material and equipment in use on the project. Documentation of this training for all new hires is required prior to their working with radioactive materials. This training shall be provided by the authorized user or designee. The following points at a minimum should be covered by these additional rules and procedures:

1. The transportation of samples from one work location to another must be done using equipment and techniques that will minimize the possibility of contamination whether by spill, dusting, or any other means. Our lab procedures for transportation of samples will be:
2. Definite procedures must be prescribed in advance that will contain and safely clean up any spilled material. The size, identity and the chemical and physical state of samples in use should be taken into consideration. Our spill procedures will be as follows:
3. Clear procedures must be outlined for handling and marking glassware and other containers, and for washing and/or decontaminating them. Our specific procedures will be:
4. Rules must be established governing the use of protective clothing and equipment such as coveralls, lab coats, rubber gloves, etc., specifying when and where they must be used and how they should be stored when not in use. In our lab, we will:
5. Techniques should be prescribed for mounting samples for counting that will prevent the spread of contamination. We will do this by:

6. When the nature and quantities of the nuclides in use make whole-body dose rates to be anything but obviously negligible, the authorized user is obligated to provide adequate and effective equipment and procedures for monitoring the doses accumulated by the authorized user and all others associated with the project or course of study. This is intended to mean that for the use in tracer quantities of such nuclides as H3 and C14, film badges and/or dosimeter pencils are useless and therefore not required. For use of nuclides such as P32, Cr51 and I125 (or others of similar penetrating power) at levels where exposures may exceed 10% of the occupational dose limit, it is necessary for the project director to provide and require the regular use of either film badges or pencil dosimeters. Federal regulations require that permanent records be kept showing these data, and any employee has the right to ask for copies at any time during or after his or her tenure at this institution. It is the duty of the RSO to maintain and administer these records and advise each worker annually, in writing, of the worker's dose as shown in these records. We will utilize the following monitoring procedures: If not required, put N/A:
7. Shielding materials and/or devices will be provided for use when hard-beta (e.g., P32) or gamma emitters are handled. The size and shape of these objects will depend on the nature of the work location, but they shall be such as to provide a sufficient thickness. Examples are 1/8 to 1/4-inch Lucite (beta), and appropriate thickness of lead sheet or blocks (gamma). We will utilize the following shielding: If not applicable, put N/A
8. Where students are being instructed in the use of radioactive isotopes, the following additional points will be included (Describe specifics below as applicable—if you will not be using radioactivity in an academic class check here _____ and go to Section 16):
 1. The degree of supervision provided each student in a class using radioactive isotopes in experiments will be decided on by the Radiation Safety Committee on the basis of the hazards inherent in the particular experiment(s). Normally, the number of students per staff member will not exceed ten. They will be supervised by instructors and assistants. At least one instructor will be in the laboratory at all times when students are present.
 2. The quantity of radioactivity to be used for each experiment and the amount of radioactivity to be handled by each student.
 3. A copy of the radiological health-safety instructions which will be given to each student.

16 Biohazards associated with the use of radioactive materials

List any biohazards involved in the use of radioactive materials and describe the special precautions that will be taken to avoid exposure of persons to these hazards. Describe what, if any, special handling is required for waste generated.

17 Toxic chemicals associated with the use of radioactive materials

List all toxic chemicals involved in the use of radioactive materials and describe the special precautions that will be taken to avoid exposure of persons to these hazards. Describe what, if any, special handling is required for waste generated.

Signature of applicant: _____

Date:

I ALSO AM AWARE THAT SUBMISSION OF THIS FORM VIA EMAIL
ORIGINATING FROM MY PERSONAL COMPUTER ACCOUNT CONSTITUTES
MY SIGNATURE
