



"An ounce of prevention is worth far more than a pound of cure."

RESEARCH INVOLVING: RADIOACTIVE MATERIALS, RADIATION PRODUCING MACHINES OR LASERS SAFETY CLEARANCE

*Please complete and submit completed form with your grant proposal to DSRT
 Incomplete forms cannot be processed*

Use of this form assists the Principal Investigator with identifying prudent practices, regulatory compliance conditions and University policy associated with the proposed research activity; and in so doing allows for each PI to include budget line items to satisfy these requirements.

TITLE OF GRANT PROPOSAL:					
NAME OF P.I.:		DEPT.			
P.I.'S TELEPHONE #:		FAX:		EMAIL:	
LOCATION (S) OF WORK:					
ANTICIPATED AWARD DATE:				DURATION OF PROJECT:	
BRIEF DESCRIPTION OF THE WORK INVOLVING RADIOACTIVE MATERIALS, RADIATION MACHINES OR LASERS:					

Your proposed research involves the use of:

- Radioactive Materials: *Complete Section 1 only*
- Radiation Machines: *Complete Section 2 only*
- Lasers: *Complete Section 3 only*

REQUIRED FOR ALL: *Attach a diagram or rough sketch of the floor plan showing the layout and rough dimensions of the laboratory (s) where work with radiation/laser will be performed or where the materials/devices will be handled or stored. Also identify the location designated for waste storage, if applicable.*

Clearly indicate on your diagram the following: entry and exit ways; air supply and exhaust vents; incubators; freezers; autoclaves; sinks; eyewash and emergency showers; biosafety cabinets; fume hoods; glove boxes; and other major laboratory equipment in the laboratory.

SECTION 1: RADIOACTIVE MATERIALS

1. Give the following information about each of the radioactive materials involved in this research

RADIONUCLIDE WITH ATOMIC AND MASS NUMBER	ESTIMATED ACTIVITY OF EACH ORDER	EXPECTED ANNUAL RADIOACTIVITY YOU PLAN TO PROCURE	PHYSICAL FORM (SOLID, LIQUID OR GAS)	CHEMICAL COMPOUND

2. Are you currently an Authorized User under the University License for the isotopes that will be used in this research project? YES NO
 If No, please contact the Radiation Safety Officer at (305) 348-2548 to obtain additional information regarding the requirements for becoming an authorized user.

3. The following is the minimum training required for FIU employees to participate in research involving radioactive materials. Do all planned researchers have current training in these areas? (Use of the word researchers includes graduate assistants)

REQUIRED TRAININGS	YES	NO	IF NO, HOW MANY REQUIRE TRAINING?
Radiation safety training for using radioactive materials	<input type="checkbox"/>	<input type="checkbox"/>	
Laboratory Safety	<input type="checkbox"/>	<input type="checkbox"/>	

4. Will the laboratory operate at negative pressure relative to adjacent space? Yes No

5. How many air changes per hour will there be in the laboratory?
 1 to 4 4 to 12 > 12 (Contact Facilities Management Project Manager to obtain information)

6. How will the airflow be monitored? Tissue paper Smoke test
 Differential pressure gauge Other method No monitoring

7. Will a chemical hood be used? YES NO

8. Will a glove box be used? YES NO

9. State if any of the following radiation instruments are available.

a. Radiation survey meter YES NO

If Yes, Detector Type: _____

Radiation and Energy it can detect: _____

b. Counting set up YES NO

If Yes, Detector Type: _____

Radiation and Energy it can detect: _____

c. Liquid scintillation counter YES NO

d. Gamma spectrometer YES NO

e. Direct reading dosimeters YES NO

f. Air sampling pump, flow meter, filter holder and filtration media YES NO

10. Describe the instruments and the detector that will be using for conducting radiation surveys

11. Have you made arrangement for back-up survey instrument when your primary instrument(s) is sent for calibration? YES NO

12. The following is a list of safety tools typically used in work with radioactive materials:

- Plexiglass shield for beta radiation YES NO N/A
- Lead shield or other shield (state the material) YES NO N/A
- Lead pig YES NO N/A

- Lead apron YES NO N/A
- Remote tools, such as tongs YES NO N/A
- Whole body badge YES NO N/A
- Ring badge YES NO N/A
- Air filters YES NO N/A
- Personal Protective Equipment YES NO N/A
(Lab. coats, gloves, shoe covers, respirators, etc.) Contact the Radiation Safety Officer for applicable respirator specifications.

13. Will this project activity result in generation of biohazardous/biomedical/hazardous chemical waste contaminated with radioactive materials? Yes No

14. Will you use, study or generate mixed waste? YES NO

15. What type of and how much quantity of mix waste will be required to be disposed?

16. Have you made budget provision for waste containers, for storage and shipment of both liquid and solid waste? YES NO

17. Have you made budget provision for the mixed waste disposal? YES NO N/A
(Remember mixed waste disposal is very expensive)

REMINDER: Identify location of the designated waste storage area on the laboratory floor plan attached.

18. Describe how access will be controlled to areas where radioactive materials will be used?

19. Will the laboratory be locked when no one is present during regular working hours? YES NO

20. Have you made budget provision for the following:
- a. Ventilation control and filtration devices: YES NO N/A
 - b. Training: YES NO
 - c. Instruments: YES NO N/A
 - d. Protective and measuring devices: YES NO
 - e. Bioassay*: YES NO N/A
 - f. Waste disposal: YES NO
 - g. Miscellaneous: YES NO
(signs, filters, special absorbent papers, etc.)

* Depending upon the type, form and radioactivity and materials you use, and the safety feature in the system you may be required to submit urine and/or fecal samples for analysis.

SECTION 2: RADIATION PRODUCING MACHINE

1. Please give details of the machine, the type of radiation it produces, energy and the flux. Describe the safety features (e.g., interlocks) of the system.

2. Are planning to use X-rays? YES NO

If Yes, please provide the following information:

- a. The maximum voltage at which the X-ray tube will be operated: _____
- b. The maximum milliamperes of the beam: _____
- c. The workload (mA.minutes/week): _____
- d. The use factor (fraction of the workload during which the beam is pointed in a particular direction under consideration): _____
- e. Occupancy factor: _____

3. The following is the minimum training required for FIU employees to participate in research involving radioactive materials. Do all planned researchers have current training in these areas? *(Use of the word researchers includes graduate assistants)*

REQUIRED TRAININGS	YES	NO	IF NO, HOW MANY REQUIRE TRAINING?
Radiation safety training for using radiation producing machine	<input type="checkbox"/>	<input type="checkbox"/>	

4. Do you have or plan to have the following?

- Whole body badge YES NO N/A
- Ring badge YES NO N/A
- Personal Protective Equipment (Lab coats, gloves, shoe covers, respirators, etc.) YES NO N/A
 Contact the Radiation Safety Officer for applicable respirator specifications.

5. Describe how access will be controlled to areas where radiation producing machines are used?

6. Will the laboratory be locked when no one is present during regular working hours? YES NO

7. Have you made budget provision for the following:

- a. Training YES NO
- b. Instruments YES NO N/A
- c. Protective and measuring devices YES NO
- d. Miscellaneous (signs, in use light, etc) YES NO

SECTION 3: LASERS

1. Describe the characteristics of the laser (Class IIIA and above) you have or plan to purchase.
 - a. Laser name and type (e.g., Nd:YAG): _____
 - b. Classification (Class IV, IIIB, etc.): _____
 - c. Wavelength (nm): _____
 - d. Beam diameter (mm): _____
 - e. Beam divergence (mrad): _____
 - f. Continuous wave Pulsed Q-Switched
 - g. Avg. power (watts): _____
 - h. Joules/pulse: _____
 - i. Pulse Width: _____
 - j. Repetition Freq: _____ Hz
2. Have all users received training? YES NO
3. Has the training been documented? YES NO
4. Has a baseline eye test been performed and recorded for all users? YES NO
 If No, do you agree to perform before commencing work? YES NO
5. Laser location- Building name/ No. _____ Room No. _____
6. Has laboratory been inspected and approved by the University Laser Safety Officer? YES NO
 If YES, date of inspection: _____
7. Have Administrative and Procedural Controls been developed? YES NO
8. Describe how access will be controlled to areas where lasers will be used?

9. Will the laboratory be locked when no one is present during regular working hours? YES NO
10. Have you made budget provision for the following?
 - a. Engineering controls laser system YES NO
 - b. Engineering controls for other safety systems, including ventilation YES NO
 - c. Personal protection, including eye exam and training YES NO

P.I Signature: _____

Date: _____

EH&S INTERNAL USE

EH&S File No: _____

PROPOSAL NO.		DATE RECEIVED BY EH&S	
REVIEWED BY:		REVIEWED ON:	
<input type="checkbox"/> ACCEPTED AS SUBMITTED _____ <small>REVIEWER INITIALS</small>		<input type="checkbox"/> ACCEPTED SUBJECT TO CONDITIONS _____ <small>REVIEWER INITIALS</small>	