

## POSHER FORM

Pre-Operational Safety, Health & Environment Review

Research Process Overview	
Date:	Research/Process Title:
Principal Investigator (PI):	Department:
Campus/Building:	Room #:
Brief Overview of Research and Laboratory Process	
Brief Description of Hazards	

Application	
Reason for POSHER (check one or more)	Comments/Details
Initial Review	
New Chemical	
New Biological Agent	
New Radioactive Material	
New Equipment	
New Process	
Process Change	
Specific Request	

## POSHER FORM

Pre-Operational Safety, Health & Environment Review

Hazard Identification			
Anticipated Type of Hazards	Yes	No	If "Yes" Go To
Chemical Hazards			Section A
Biological Hazards			Section B
Radiation Hazards – Ionizing			Section C.1
Radiation Hazards – Non-Ionizing			Section C.2
Equipment/Process Hazards			Section D

Section A – Chemical Hazard Review				
Section A.1 – Chemical Hazard Review Questions and Action Items				
Chemical Process Details	Yes	No	Details / Engineering Controls	Action Owner
Will special chemical handling training be required?			text	
Is there special chemical handling equipment or personal protective equipment required?				
Will there be pressurized process or system liquids (i.e. pumped chemical lines, hydraulics)?				
Will there be pressurized process gas systems?				
Will external chemical delivery systems be required (liquids)?				
Will chemical storage be required near the process (indicate storage capacity in Details)?				
Will highly energetic chemical reactions occur?				
Will there be an overnight/unattended chemical process?				
Will there be adequate laboratory security in light of chemical and operational hazards?				
Will heat be required or generated in the process?				
Will there be a cryogenic process?				
Will there be use of controlled substances?				

<b>Section A – Chemical Hazard Review</b>				
<b>List all <u>high hazard chemicals</u> associated with this research (i.e. highly reactive, peroxide formers, HF, highly toxic, pyrophoric, flammable, explosives, etc.).</b>	<b>Identify primary hazards (i.e. toxic, pyrophoric, etc.)</b>	<b>Estimate maximum daily usage, and Annual usage rate</b>	<b>Indicate storage capacity in the lab &amp; size(s) of container</b>	<b>Estimate amount to be <i>disposed of as hazardous Waste</i></b>

Note: Make additional copies of this page as needed

## POSHER FORM

Pre-Operational Safety, Health & Environment Review

### Section B – Biological Hazard Review

#### Section B.1 – Biological Agents Use Information

- Based on infectious/pathogenic agents listed from NIH, CDC, ABSA or other resources
- Based on Select Agents and Toxins listed from HHS and USDA (<http://www.selectagents.gov/Select Agents and Toxins List.html>)

List all Biological Agents and Toxins that are subject to the section B.1	Identify Biosafety level (1 - 2)	Identify source of biological agent	Indicate: Is this a select agent or toxin	Estimate amount to be <i>deactivated</i> , or disposed of as Regulated Waste	Comments:

Note: Make additional copies of this page as needed

## POSHER FORM

Pre-Operational Safety, Health & Environment Review

Section B – Biological Hazard Review				
Section B.2 – Biological Hazard Review Questions and Action Items				
Biological Process Details	Yes	No	Details / Engineering Controls	Action Owner
Are SOPs developed for agents listed on B.1?				
Will the process involve the centrifugation, blending, sonication or maceration of infectious or biohazardous materials?				
Will the process involve the use of recombinant DNA or gene therapy?				
Will the process involve use of blood, human body fluids, unfixed tissues or organs, TB, HIV/ HBV containing cell or tissue cultures?				
Will the procedure involve the use of non-human vertebrates?				
Will this project involve the use of human subjects?				
Will the process involve the use of pesticides?				
Will the process involve the use of sharps (i.e. needles, scalpels, etc.)?				
Will the process involve creation of splashes and/or aerosols?				
Will the process involve storage of B.1 listed items in freezers, incubators, etc.?				
Will the process require integrated pest management?				
Will the process require medical surveillance?				
Will the process require the use of an Autoclave?				
Will the process require use of a centrifuge or rotor?				
Will the process require use of vacuum systems?				
Will the process require transport of the B.1 item to a different location?				
Will there be adequate laboratory security in light of B.1 items and operational hazards?				
Will the use of a biosafety cabinet be required?				

## POSHER FORM

Pre-Operational Safety, Health & Environment Review

Section B – Biological Hazard Review	
Section B.3 – Biological Hazard Decontamination / Sanitation Review	
Describe Decontamination/Sanitation Procedure	List Agents and Chemicals Involved

Section C – Radiation Hazard Review					
Section C.1 – Ionizing Radiation Hazard					
Radiation Process Details		Yes	No	Details / Engineering Controls	Action Owner
Will this process involve the use of radioactive material? If yes, complete sections C.1.1 – C.12					
C.1.1	A formal written authorization issued by the RSO or RSC?				
C.1.2	Have training and user forms been completed?				
Will this process involve the use of ionizing radiation devices (i.e. x-rays, other Radiation Producing Equipment)? If yes, complete sections C.1.3 – C1.4					
C.1.3	A permit obtained from the RSO or acquisition (by purchase, transfer, loan, donation or otherwise) of ionizing RPE at Clemson?				
C1.4	Have training and user forms been completed?				

Section C.2 – Non-Ionizing Radiation Hazard				
Radiation Process Details	Yes	No	Details / Engineering Controls	Action Owner
Will any equipment present a source of RF/Microwave energy which can present a hazard in normal use or in service?				
Will the equipment involve the use of magnetic energy?				
Will the equipment involve the use of Class 3b or 4 lasers?				
Will there be any other sources of non-ionizing radiation that require controls to ensure personnel safety?				

Section D – General Equipment/Process Hazard Review				
General Equipment / Process Details	Yes	No	Details / Engineering Controls	Action Owner
Are written standard operating procedures (SOP), including startup / shut down of equipment, available?				
Will equipment specific training be required for users?				
Will there be processes or equipment being considered high hazard?				
Will there be <b>special hazards</b> associated with start up or shut down of processes or equipment?				
Will there be processes or equipment that should have “off hour” use restrictions for normal use or service?				
Should the equipment or process have buddy-system requirements for normal use or service?				
Will there be exposed sources of electrical voltage?				
Will there be exposed hot surfaces?				
Will maintenance be required while the equipment is on?				
Will mechanical guarding be required?				
Will there be vibration sources? Vibration mitigation?				

## POSHER FORM

### Pre-Operational Safety, Health & Environment Review

Will there be a potential health risk from normal operation or does the procedure present <b>reproductive health hazards</b> ?				
Will there be required medical surveillance for users or staff other than those surveillances already required for animal use or radioactive material use?				
Will there be ergonomic concerns with the process or equipment?				
Will local exhaust processes be required?				
Will there be noises over or approaching 85db?				
Will the process involve the production of hazardous waste				

Facilities Services Requirements Review				
What Type of Facilities Services Do You Need	Yes	No	If services do not exist, list action	Action Owner
Chemical Fume Hood?				
Biosafety Cabinet?				
Specialty local exhaust (glove box, gas cabinet or exhausted enclosure?)				
Compressed Air?				
Vacuum?				
Pure Water?				
Natural Gas?				
Local Process Cooling Water?				
Sanitary Drain?				
Special Electrical Requirement? (Voltage, Amperage, Phase or Plug Connections)				
Electromagnetic Interference Protection?				
Vibration Protection?				
Cold Room?				
Controlled Chamber?				



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Pre-Operational Safety, Health & Environment Review

Emergency Equipment Requirement Review				
Emergency Equipment	Yes	No	If services do not exist, list action	Action Owner
Are eyewash / showers required?				
Is local fire suppression required?				
Is a Special First Aid Kit Required?				
Is Toxic Gas Monitoring Required?				
Are Local Alarms/Indications Required?				
Will a special emergency response protocol be Required?				

Occupational and Environmental Safety				
	Yes	No	Pending	Comments
Given what is currently known and assuming all open actions are closed, can this research process be safely conducted at Clemson?				
Notes:				
OES signature:				
Date:				

Renovation / Project Information			
	Yes	No	Comments / Details
Does this research require renovation to an existing space?			
Has this project been assigned an AiM project number (provide number in comments)			

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Pre-Operational Safety, Health & Environment Review

Action Registry			
Issue	Action Required	Action Owner	Due Date