

VOLUNTEERS AND MINORS IN THE LABORATORY GUIDE

Version	Date	Comments
1	February, 2014	Initial <i>Minors in the Laboratory Guide</i>
2	July, 2016	Update to include volunteers and title change

A. INTRODUCTION

George Mason University is dedicated to providing enriching educational opportunities to volunteers and minors interested in pursuing careers in science, technology, engineering, and mathematics (STEM). The university is committed to providing a healthy and safe environment for all members of the campus community and visiting members of the public.

B. SCOPE

This Guide applies to volunteers and minors conducting activities in laboratories at George Mason University and outlines the process in place to authorize laboratory activities for minors. The Guide is intended to outline restrictions on work involving minors and volunteers and provide clear guidance on how to register laboratory activities involving volunteers and minors. Restrictions in place serve to address the following concerns specific to minors:

- Minors may be more susceptible to certain toxic agents and chemicals
- Minors may be less aware of the potential risks and hazards in laboratories
- Minors require supervision and oversight.

Volunteers, by definition, do not receive payment for their experience in the laboratory. A minor is defined as an individual under the age of 18. A laboratory is defined as a room where hazardous chemicals, radiation, or biological materials are handled or stored (to include animal facilities, greenhouses, instructional laboratories, and research laboratories). This Guide is not applicable to George Mason University students that are enrolled in laboratory courses, even if under the age of 18.

C. RELEVANT UNIVERSITY POLICIES

- University Policy Number 2228, *Children and Minors in the Workplace*
- University Policy Number 2221, *Background Investigations*

D. AGE RESTRICTIONS

Children under the Age of Twelve

Children under the age of 12 are permitted in university research laboratories only when they are participants (subjects of study) in an approved research study; children under the age of 12 are

not permitted in university research laboratories for any other reason. Laboratories must never be utilized as a substitute for child care.

Visitors Ages Twelve to Seventeen

Persons between the ages of 12 and 17 may visit research laboratories as part of officially supervised educational activities that have been approved by the Principal Investigator/Laboratory Supervisor (PI/LS). These visiting minors must be under the direct supervision of a university employee who is trained and knowledgeable of applicable hazards. Visits to laboratories should not take place when hazardous material is in use. Prior to allowing minors to tour or observe in a laboratory, the supervising employee must conduct a basic safety orientation, including both general safety information and any hazards particular to the lab in question. The PI/LS should maintain documentation of dates of training and a list of attendees.

Minors Conducting Research Activities

George Mason University is committed to providing educational and research opportunities, when feasible, to minors. PI/LS are permitted to have minors participate in and perform educational activities and routine education-related duties in a research laboratory. Any research conducted by minors must comply with University Policy 2228 *Children and Minors in the Workplace* and must have been reviewed and approved by EHS. A risk assessment must be on file with EHS for all projects involving minors.

E. WORK RESTRICTIONS

The following restrictions are in place for projects involving minors:

- Minors must be supervised at all times in the laboratory.
- Minors are not permitted to visit or work in laboratories operating at BSL-3 or ABSL-3 or other high hazard locations such as a machine shop.
- Minors may not perform work involving:
 - Agents on the federal select agent list (www.selectagents.gov),
 - Highly hazardous substances including pyrophorics and explosives,
 - Large quantities of flammable substances,
 - Controlled Substances, and
 - Substances of high acute toxicity having a rat LD₅₀ less than or equal to 50 mg/Kg (e.g. sodium azide, nicotine, etc.).

F. REQUIREMENTS FOR PI/LS SUPERVISING MINORS

The following requirements are in place for PI/LS who will be supervising minors. If the responsibility of supervising the minor will be delegated to a staff member, the staff member must meet these requirements.

- Ability to provide direct supervision (must be able to hear and see the minor at all times) during laboratory activities.

- Successful completion of a background check through the university in accordance with University Policy Number 2221, *Background Investigations*.
- Current on all safety training.
- Knowledge and understanding of laboratory hazards and proper safety controls.

G. REGISTRATION PROCESS

Work involving volunteers and minors must be approved by EHS prior to project start. The PI/LS is responsible for submitting all required paperwork to EHS for review. Volunteers over the age of 18 do not need to complete requirements specific to minors.

1. Upon agreeing to mentor a minor or volunteer in the laboratory, the PI/LS completes the *Risk Assessment for Volunteers and Minors* (Appendix A) and submits to labsafe@gmu.edu.
2. A *Teacher Recommendation Form* (Appendix B) may be completed and submitted electronically to PI/LS and EHS.
3. EHS will review the submission and approve or deny the project.
4. PI/LS will forward approval and the Release to the volunteer, minor, and minor's parent/guardian along with the *Release for Laboratory Volunteers and Minors* (Appendix C). A copy of the signed *Release for Laboratory Volunteers and Minors* must be on file in the laboratory and with EHS before beginning work.
5. Volunteers and minors must attend safety training relevant to the work to be performed.

H. RESPONSIBILITIES OF THE PRINCIPAL INVESTIGATOR/LABORATORY SUPERVISOR (PI/LS)

- Provide information to the volunteer (and their parent or guardian if under 18) regarding hazardous substances and other laboratory hazards.
- Provide adequate training to the volunteer on hazards present in the laboratory, procedures to be performed, and materials to be used to include review of the *Supplemental Laboratory Safety Plan*. Maintain written documentation of this training.
- Ensure minor is supervised at all times.
- Update the Institutional Animal Care and Use Committee (IACUC) and Institutional Biosafety Committee (IBC) protocols as necessary.
- Maintain copies of forms related to the volunteer's work in the Safety Records and Resources binder within the laboratory.

I. RESPONSIBILITIES OF THE VOLUNTEER OR MINOR

- Understand hazards associated with the work to be performed.
- Attend safety training relevant to laboratory procedures.
- Follow guidelines outlined in EHS safety training, laboratory-specific training, relevant manuals, and the *Supplemental Laboratory Safety Plan*.
- Sign the *Release for Laboratory Volunteers and Minors* form.

J. RESPONSIBILITIES OF THE PARENT/GUARDIAN

- Be aware of hazards associated with the work to be conducted by the minor.
- Sign the *Release for Laboratory Volunteers and Minors* form for minors for whom they are responsible.

K. RESPONSIBILITIES OF EHS

- Review all laboratory research work conducted by volunteers.
- Provide general laboratory safety training through formal training program to include such courses as *Laboratory Safety Orientation* or *Biological Safety for BSL-2 Laboratories*.

Teacher Recommendation Form

Complete this form and return to EHS via email at labsafe@gmu.edu or by fax at 703-993-8389. A copy of this form should also be submitted to the appropriate Principal Investigator/Laboratory Supervisor.

Recommendation For:

SECTION 1 - RECOMMENDER/EVALUATOR INFORMATION

Name

Phone

Email

Name of School

What courses have you taught this student?

SECTION 2 - EVALUATION

Please provide your evaluation of the student in the following areas:

Quality	Rating*	Comments
Academic ability	1 2 3 4 5 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Ability to follow instruction and work with others	1 2 3 4 5 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Safety and work habits	1 2 3 4 5 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Maturity, dependability and responsibility	1 2 3 4 5 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	

* 1 = Below Average, 5 = Exceptional

Additional comments for consideration:

Signature: _____ **Date Completed:** _____

Release for Laboratory Volunteers and Minors

George Mason University is committed to providing a safe and healthy laboratory environment by complying with applicable federal, state, and local regulations. You are responsible for observing safety precautions and guidance when in a George Mason University laboratory. There is a risk of exposure that you assume when you enter a laboratory.

Hazards that may be present in the laboratory include but are not limited to: toxics, flammables, corrosives (acids and bases), oxidizers, radioactive materials, allergens such as animal dandruff, sharp objects, extreme temperatures, and ultraviolet light. Specific hazards you may be exposed to through your work should be outlined in a work-specific risk assessment.

Persons who suffer allergic reactions, are pregnant, have sensitive skin, or have other medical issues should consult with a physician (and the Principal Investigator/Laboratory Supervisor [PI/LS] as necessary) prior to beginning any laboratory work or procedures. Safety Data Sheets (SDS) for the hazardous materials used in the laboratory are available for review in your laboratory. Basic personal protective equipment (PPE) (e.g., lab coat, eye protection, gloves, etc.) is required to be worn in laboratories. In some instances, additional PPE (e.g., respirator, hearing protection, etc.) may also be required. Training on certain types of PPE is required to be completed prior to its use.

I, the undersigned, accept and agree to the following terms and conditions in consideration for my use of George Mason University's research and instructional laboratory facilities.

- 1. Access to Facilities.** The facilities are being made available to me as an educational or research opportunity.
- 2. Health and Safety Risks.** I understand that George Mason University laboratories may contain hazardous substances and equipment. I will take every precaution necessary to protect my health and safety, and the health and safety of others. I will acquaint myself with and conduct my activities in accordance with all safety rules and safe operational procedures. If I am not familiar with or I do not know how to handle safely a substance or piece of equipment, I will seek assistance from qualified George Mason University personnel. I recognize that I may be subjected to potential risks, illnesses and injuries. I have made my own investigation of these risks, understand these risks and assume them knowingly and willingly.
- 3. No Medical Coverage.** I understand that if I am injured as a result of my activities at George Mason University, I am not covered by George Mason University insurance of any kind. It will be my responsibility to pay for emergency room care, doctors' services, hospitalization, and any other related costs, medical or non-medical. I will not be eligible to participate in George Mason University's health, disability or life insurance program.
- 4. Appropriate Conduct.** I agree to observe all applicable federal, state, university and departmental policies, rules and regulations that pertain to my conduct on campus and in the facilities. I agree that George Mason University officials may require me to leave the facilities if they believe that I have violated a policy, rule or regulation or if they believe that my conduct is inappropriate.
- 5. Confidentiality.** I agree not to disclose or to use, directly or indirectly, any proprietary or confidential research, data, trade secrets or other similar information of which I may become aware as a result of my activities in George Mason University's facilities.

6. ASSUMPTION OF RISK AND RELEASE OF CLAIMS. Knowing the risks described above, I agree, on behalf of my family, heirs and personal representative(s), to assume all the risks and responsibilities surrounding my use of and access to George Mason University's laboratories. To the maximum extent permitted by law, I release, hold harmless and agree to indemnify George Mason University, its current and former officers, directors, faculty, staff, representatives, volunteers, employees, students, other trainees and agents, and their respective heirs and assigns, from and against any present or future claim, loss or liability for injury to person or property which I may suffer, or for which I may be liable to any other person, related to my use of- and access to the laboratories, resulting from any cause including but not limited to negligence by George Mason University, its current or former directors, officers, faculty, staff, representatives, volunteers, employees, students, other trainees or agents.

I have carefully read this Release for Laboratory Volunteers and Minors before signing it.

_____ Minor/Volunteer Printed Name	_____ Minor/Volunteer Signature	_____ Date
_____ Parent/Guardian Printed Name	_____ Parent/Guardian Signature	_____ Date

Relationship to Volunteer/Minor: _____

NOTE: If volunteer is less than 18 years of age, parent or guardian must sign.

Please submit completed forms to your PI/LS. A copy should be sent to the Environmental Health and Safety Office via fax to 703-993-8389.

Risk Assessment for Volunteers and Minors

This form is to be completed by the Principal Investigator/Laboratory Supervisor (PI/LS) and submitted to the Environmental Health and Safety Office (EHS) at labsafe@gmu.edu.

SECTION 1 – PROPOSED LABORATORY WORK

PI/LS Name:		
Project Title:		EHS Use: RA
Project Overview and Description:		
Proposed Locations:		
IBC Protocol Number (if applicable)		

SECTION 2 – MINOR INFORMATION

Name:	Start Date:	Age on Start Date:
Date of Birth:	End Date:	

SECTION 3 – PROJECT PROCEDURES

For each item checked below, provide a description including biological materials and chemicals involved, description of procedure or process, the engineering controls and personal protective equipment to be utilized.

MOLECULAR BIOLOGY TECHNIQUES

<input type="checkbox"/> RNA Extraction	<input type="checkbox"/> DNA Extraction	<input type="checkbox"/> PCR
<input type="checkbox"/> Transfection	<input type="checkbox"/> Transformation	<input type="checkbox"/> Gel Electrophoresis
<input type="checkbox"/> DNA Sequencing	<input type="checkbox"/> Nanoparticle Sample Preparation	<input type="checkbox"/> Other:
Description:		

CELLULAR TECHNIQUES AND MICROBIOLOGY

<input type="checkbox"/> Electron Microscopy	<input type="checkbox"/> Flow Cytometry	<input type="checkbox"/> Cell Culture – Specify cell lines:
<input type="checkbox"/> Confocal Microscopy	<input type="checkbox"/> Fluorescent Microscopy	<input type="checkbox"/> Microbial Culture – Specify microbes:
<input type="checkbox"/> Tissue staining	<input type="checkbox"/> Laser Capture Microdissection	<input type="checkbox"/> Viral Plaque - Specify viruses:
<input type="checkbox"/> Other:		
Description:		

PROTEIN TECHNIQUES

<input type="checkbox"/> Protein Extraction	<input type="checkbox"/> Gel Electrophoresis	<input type="checkbox"/> Western Blot
<input type="checkbox"/> Immunohistochemistry	<input type="checkbox"/> Elisa	<input type="checkbox"/> Reverse Phase Protein Microarrays
<input type="checkbox"/> Mass Spectrometry	<input type="checkbox"/> Functional Assay	<input type="checkbox"/> Nanoparticle Sample Preparation
<input type="checkbox"/> Other:		
Description:		

CHEMISTRY/BIOCHEMISTRY

<input type="checkbox"/> Metabolite Extraction	<input type="checkbox"/> UV-Vis Spectroscopy	<input type="checkbox"/> Nanoparticle Development
<input type="checkbox"/> Functional Assay	<input type="checkbox"/> Other:	
Description:		

ANIMAL STUDIES

<input type="checkbox"/> Live Animals (list below)	<input type="checkbox"/> Preserved Animal (describe below)	<input type="checkbox"/> Animal Tissue Collection (list animal species and tissue below)
<input type="checkbox"/> Other:		
Description:		

HUMAN MATERIAL

<input type="checkbox"/> Tissue Sectioning (fixed or unfixed)	<input type="checkbox"/> Sample Analysis (list sample type below)	<input type="checkbox"/> Cell Culture (list cell lines below)
<input type="checkbox"/> Other:		
Description:		

SECTION 4 – SUPERVISION OF MINORS

The university requires that all personnel who work with minors complete a background check through the Department of Human Resources. Please list all personnel who will supervise the minor and indicate whether a background check has been completed.

Name	Background Check?
	<input type="checkbox"/> YES <input type="checkbox"/> NO
	<input type="checkbox"/> YES <input type="checkbox"/> NO
	<input type="checkbox"/> YES <input type="checkbox"/> NO
	<input type="checkbox"/> YES <input type="checkbox"/> NO

This form was submitted by:

FOR EHS USE ONLY
Additional controls required:
Reviewed by:
Date approved: