I. PURPOSE

Villanova University is dedicated to providing enriching educational opportunities, including opportunities to engage in laboratory science, to students and minors in a safe and healthy environment. The purpose of this guide is to protect the safety of minors and other laboratory personnel based on the following principles:

- 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

II. SCOPE

This Guide applies to minors conducting research activities in Designated Laboratories at Villanova University and outlines the process in place to authorize laboratory activities for minors. Except to the extent that the other relevant University Policies listed below in Section VI. Related Information/Forms apply to such students, this Guide is not applicable to Villanova University students, even if under the age of 18. This Guide is not applicable to outreach and recruiting programs in which minors visit campus for a tour or open house as described in the Minors in Villanova University Programs Policy.

III. DEFINITIONS

Minor. An individual under the age of 18. For purposes of this policy minors do not include Villanova University students who may be under the age of 18 or dual enrolled high school students who are registered to take classes at Villanova.
Designated Laboratory. A room where hazardous chemicals or radioactive or biological materials are handled or stored (includes animal facilities, greenhouses, instructional laboratories, and research laboratories).

IV. POLICY STATEMENT
A. Age Restrictions

Children Under the Age of Ten (10)
Children under the age of 10 are permitted in university Designated Laboratories only when they are participants (subjects of study) in an approved research study; children under the age of 10 are not permitted in Designated Laboratories for any other reason. Children under the age of 10 who are enrolled in at least 5th grade may participate in officially supervised educational activities. No laboratory facility can be used as a substitute for child care.

Visitors Ages Ten (10) to Seventeen (17)
Subject to the Principal Investigator/Laboratory Supervisor (PI/LS)’s compliance with the Minors in Villanova University Programs Policy, persons between the ages of 10 (or who are enrolled in at least 5th grade) and 17 may visit Designated Laboratories as part of officially supervised educational activities that have been approved by the PI/LS and by the departmental chair or his/her designee. These visiting minors must be under the direct supervision of a university employee who is trained and knowledgeable of applicable hazards. Visits to Designated Laboratories should not take place when hazardous materials are in use. Prior to allowing minors to tour or observe in a Designated 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
Villanova University is committed to providing educational and research opportunities, when feasible, to minors. Subject to the pre-approval of the departmental chair or his/her designee, PI/LS are permitted to have minors participate in and perform educational activities and routine education-related duties in a Designated Laboratory. Any research conducted by minors must comply with Villanova’s Minors in Villanova University Programs Policy, must comply with all policies of the Office of Research Administration, and must have been reviewed and approved by the Environmental Health and Safety (EHS) office and the Office of Insurance and Risk Management (“Risk Management”). A risk assessment (Appendix A) must be completed for all projects involving minors.

B. Work Restrictions
The following restrictions are in place for projects involving minors:

- Minors must be supervised at all times in the Designated Laboratory
• Minors are not permitted to visit or work in high hazard locations such as a machine shop
• Minors may not perform any work involving:
  o Agents on the federal select agent list (www.selectagents.gov)
  o Highly hazardous substances including pyrophorics and explosives
  o Large quantities of flammable substances
  o Controlled Substances
  o Substance of high acute toxicity

C. Requirements for PI/LS
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 supervision at all times to the minor during laboratory activities.
• Successful completion of background checks through the university, in accordance with the Minors in Villanova University Programs policy
• Current on all required safety training
• Knowledge and understanding of laboratory hazards and proper safety controls.

V. PROCEDURE
A. Registration Process
All work involving minors must be approved by EHS and the Office of Insurance and Risk Management prior to project start. The PI/LS is responsible for submitting all required paperwork to EHS for review.
1. Upon agreeing to mentor a minor in a Designated Laboratory, the PI/LS completes the Risk Assessment for Volunteers and Minors (Appendix A) and submits to ehs@villanova.edu. The submission is due no later than 4 weeks before the research is to begin.
2. A Teacher Recommendation Form (Appendix B) must be completed and submitted electronically to PI/LS and EHS.
3. EHS will review the Risk Assessment for Volunteers and Minors and approve or deny the project.
4. PI/LS will forward approval to parent/guardian along with the Volunteer/Minor in Designated Lab Waiver and Release. A signed Volunteer/Minor in Designated Lab Waiver and Release must be on file in the laboratory and with EHS before beginning work.
5. Minor must attend safety training relevant to the work to be performed.

Please note that this registration process must be completed in addition to (and not in place of) any registration and related requirements in the Minors in Villanova University Programs Policy.
B. Responsibilities of the Principal Investigator/Laboratory Supervisor

- Provide information to the minor and his/her parent/guardian regarding hazardous substances and other laboratory hazards.
- Provide adequate training to the minor on hazards present in the Designated Laboratory, procedures to be performed, and materials to be used, including review of the pertinent sections of the Chemical Hygiene Plan. Maintain written documentation (attendees, dates, content of this training).
- Ensure minor is supervised at all times.
- Update the Institutional Animal Care and Use Committee (IACUC), Institutional Review Board (IRB), and Institutional Biosafety Committee (IBC) protocols as necessary.
- Maintain copies of forms related to the minor’s work.

C. Responsibilities of the Minor

- Understand hazards associated with the work to be performed.
- Attend safety training relevant to laboratory procedures.
- Follow guidelines outlined in safety training, relevant manuals, and the Chemical Hygiene Plan.

D. Responsibilities of the Parent/Guardian

- Be aware of hazards associated with the work to be conducted by the minor.
- Sign the Volunteer/Minor in Designated Lab Waiver and Release.

E. Responsibilities of EHS

- Review laboratory research work to be conducted by minors
- Provide guidance on any requirements for specialized lab safety training.

VI. RELATED INFORMATION/FORMS

- Appendix A: Risk Assessment for Volunteers and Minors
- Appendix B: Teacher Recommendation Form
- Appendix C: Volunteer/Minor in Designated Lab Waiver and Release (Sample Only, actual waiver must be approved by Risk Management for specific activity)
- Minors in Villanova University Programs Policy
- Child Abuse Reporting Policy
- Villanova University Background Screening Policy
- Handbook of Policies and Procedures for Research Involving Human Subjects

VII. HISTORY

Effective date: September 11, 2017
Revision date(s): November 1, 2017
<table>
<thead>
<tr>
<th>Policy Number:</th>
<th>Effective Date:</th>
<th>Page: 5 of 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>S46</td>
<td>September 11, 2017</td>
<td></td>
</tr>
</tbody>
</table>

**VIII. RESPONSIBLE UNIVERSITY DIVISION/DEPARTMENT**
Director, Department of Environmental Health and Safety  
800 Lancaster Ave.  
Villanova, PA 19085  
(610) 519-3801

**IX. RESPONSIBLE ADMINISTRATIVE OVERSIGHT**
Director, Department of Environmental Health and Safety  
800 Lancaster Ave.  
Villanova, PA 19085  
(610) 519-3801
APPENDIX A: 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 at ehs@villanova.edu

<table>
<thead>
<tr>
<th>PI/LS Name</th>
<th>Project Title</th>
<th>Project Overview</th>
<th>Proposed Location</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name:</th>
<th>Start Date:</th>
<th>Age on Start Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth:</td>
<td>End Date:</td>
<td></td>
</tr>
</tbody>
</table>

| 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**

- [ ] RNA Extraction
- [ ] DNA Extraction
- [ ] PCR
- [ ] Transfection
- [ ] Transformation
- [ ] Gel Electrophoresis
- [ ] DNA Sequencing
- [ ] Nanoparticle Sample Prep
- [ ] Other

*Description:*

**CELLULAR TECHNIQUES AND MICROBIOLOGY**

- [ ] Electron Microscopy
- [ ] Flow Cytometry
- [ ] Cell culture (specify cell lines)
- [ ] Confocal Microscopy
- [ ] Fluorescent Microscopy
- [ ] Microbial culture (specify microbes)
- [ ] Tissue Staining
- [ ] Laser Capture Microdissection
- [ ] Viral plaque (specify viruses)

- [ ] Other:

*Description:*

**PROTEIN TECHNIQUES**

- [ ] Protein Extraction
- [ ] Gel Electrophoresis
- [ ] Western Blot
- [ ] Immunohistochemistry
- [ ] Elisa
- [ ] Reverse Phase Protein Microarrays
- [ ] Mass Spectrometry
- [ ] Functional Assay
- [ ] Nanoparticle Sample Prep
- [ ] Other:
<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHEMISTRY/BIOCHEMISTRY</strong></td>
</tr>
<tr>
<td>□ Metabolite Extraction □ UV – Vis Spectroscopy □ Nanoparticle Development</td>
</tr>
<tr>
<td>□ Functional Assay □ Other:</td>
</tr>
<tr>
<td><strong>ANIMAL STUDIES</strong></td>
</tr>
<tr>
<td>□ Live Animals (list below) □ Preserved Animal (describe below) □ Animal Tissue Collection (list animal species and tissue below)</td>
</tr>
<tr>
<td>□ Other:</td>
</tr>
<tr>
<td><strong>HUMAN MATERIAL</strong></td>
</tr>
<tr>
<td>□ Tissue Sectioning (fixed or unfixed) □ Sample Analysis (list sample type below) □ Cell Culture (list cell lines below)</td>
</tr>
<tr>
<td>□ Other:</td>
</tr>
<tr>
<td><strong>MECHANICAL HAZARDS</strong></td>
</tr>
<tr>
<td>□ Sharps □ Rotating Equipment □ Soldering, Welding, etc.</td>
</tr>
<tr>
<td>□ Other:</td>
</tr>
</tbody>
</table>
SECTION 4 – SUPERVISION OF MINORS

Villanova University requires that all programs involving minors be registered via the University’s Online Registration System available at the University Compliance Office website: https://www1.villanova.edu/villanova/president/uco.html

Registration Completed by: [ ]
Date Completed: [ ]

Villanova University requires that all personnel who work with minors complete a series of background checks through the Human Resources Department. Please list all personnel who will supervisor/work with the minor and indicate whether all 3 required background checks have been completed as specified in the Minors in Villanova University Programs policy.

<table>
<thead>
<tr>
<th>Name</th>
<th>Indicate Background Checks Completed with an “X”</th>
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</thead>
<tbody>
<tr>
<td>PA State Police Access to Criminal History</td>
<td>PA Dept of Human Services Child Abuse History Clearance</td>
</tr>
</tbody>
</table>

FOR EHS USE ONLY

Additional Concerns?
Reviewed by: [ ]
Date approved: [ ]
APPENDIX B

Teacher Recommendation Form

Complete this form and return to Environmental Health and Safety (EHS) at ehs@villanova.edu or fax to 610.519.7998. A copy of this form should also be submitted to the appropriate Principal Investigator/Laboratory Supervisor.

Recommendation For:

<table>
<thead>
<tr>
<th>SECTION 1 – RECOMMENDER/EVALUATOR INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Name of School:</td>
</tr>
<tr>
<td>What courses have you taught this student:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 2- EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please provide your evaluation* of the student in the following areas by checking the appropriate box:</td>
</tr>
<tr>
<td>Quality</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Academic Ability</td>
</tr>
<tr>
<td>Ability to follow instruction</td>
</tr>
<tr>
<td>Ability to work with others</td>
</tr>
<tr>
<td>Safety and work habits</td>
</tr>
<tr>
<td>Maturity, dependability &amp; responsibility</td>
</tr>
</tbody>
</table>

* 1=Below Average, 5=Exceptional
### Additional comments for consideration:

<table>
<thead>
<tr>
<th>Signature:</th>
<th>Date:</th>
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</table>
Appendix C – Sample Only
Volunteer/Minor in Designated Lab Waiver and Release

This Waiver and Release Agreement ("Release") is made as of ______________, 2015. The parties to this Release are __________________________________________ ("Participant"), ___________________________________________ ("Parent/Guardian"), and Villanova University ("University"). The parties, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, intending to be legally bound hereby agree as follows.

1. **Program.** Participant has voluntarily chosen to participate in non-credit work in a designated laboratory in the College of _______________________ under the direct supervision of ______________________ (Principal Investigator/Laboratory Supervisor) on the campus of Villanova University (hereafter "Program").

   Program dates: ________________ to ________________,
   Program location: ________________
   Number of hours per week: ________________

2. **Assumption of Risk.** Participant and Parent/Guardian understand and agree that participation in the Program presents risks to Participant and Participant's property. Such risks may include exposure to potentially serious health and safety hazards and risks of personal injury, property damage or death associated with the various activities in the Program. Individual laboratories vary in the inherent types of potential hazards present. Participant and Parent/Guardian are responsible for researching and evaluating the risks Participant may face and are responsible for Participant's actions. Any activities that Participant may take part in, whether as a component of the Program or separate from it, will be considered to have been undertaken with Participant’s and Parent’s/Guardian’s approval and understanding of any and all risks involved.

   While participating in this Program, the Participant will conduct research and experiments as described on the Risk Assessment document.

   Prior to beginning work, the Principal Investigator/Laboratory Supervisor will train the Participant on the University’s policies regarding working in laboratories and at the University.

3. **Participant Health.** Participant and Parent/Guardian agree that the Participant:
   a. Has no physical or medical condition that would prohibit him/ her from or materially increase the risk to him/ her from participating in the Program.
   b. Has not taken and is not under the influence of any prescription or over the counter drugs or other substances that might adversely affect his/ her ability to participate in the Program.
   c. In the event that non-emergency first aid/medical evaluation is needed, every effort will be made to first contact the Participant's Parent/Guardian to obtain parental consent to treat or transport. In the event the Parent/Guardian cannot be reached in a timely manner, Parent/Guardian authorizes the University, at their discretion, to administer to or seek for Participant first aid and other emergency medical services, (including,
without limitation, the Heimlich maneuver, mouth-to-mouth resuscitation, cardiopulmonary resuscitation (CPR) and defibrillation).

4. Adherence to Standards. Participant and Parent/Guardian understand and agree that Participant shall: (i) abide by all policies, rules, and regulations of the University, (ii) wear appropriate attire and protective equipment, (iii) abide by all laws, rules, directions, and precautions issued by University or its representatives, by any associated individuals, institutions, or organizations, or by any governmental agency. Participant and Parent/Guardian understand that, in its sole discretion, the University or its representative may terminate Participant’s participation in the Program at any time. Reasons for termination may include, but are not limited to: inappropriate conduct or other behavior by Participant deemed detrimental to the best interests of the Program; emergencies; or health or safety considerations.

5. Release of Claims. Participant, Participant’s Parents/Guardians, and their respective heirs, executors, administrators, employers, agents, representatives, insurers, and attorneys, will not hold liable and hereby release and discharge the University, its officers, trustees, faculty, employees, agents, students, volunteers and representatives (hereafter “released parties”) from and waive any and all claims, which may arise from any cause whatsoever, including any negligent act or omission by the released parties. Participant and Parent/Guardian further release and discharge the released parties from responsibility for any accident, illness, injury including death, or any other consequences arising or resulting directly or indirectly from Participant’s participation in the Program. Participant and Parent/Guardian recognize and agree that the released parties assume no responsibility for any liability, damage, or injury that may be caused by Participant’s negligence or willful acts committed prior to, during, or after participation in the Program, or for any liability, damage, or injury caused by the intentional or negligent acts or omissions of any other participant in the Program, or caused by any other person. Participant and Parent/Guardian recognize that this Release means they are giving up, among other things, rights to sue the released parties for injuries, damages or losses they may incur. Participant and Participant’s Parents/Guardians also understand that this Release binds their heirs, executors, administrators and assigns, as well as themselves.

6. Insurance. Participant and Parent/Guardian agree that they are responsible for all Participant’s own loss, liability and expenses, including any medical expenses incurred in connection with the Program. Participant and Parent/Guardian agree, as a condition of participating in the Program, to maintain adequate health and accident insurance to cover any medical expenses incurred during or as a result of participation in the Program. Participant and Parent/Guardian understand that the University does not carry or maintain health, medical or disability insurance coverage for participants in the Program. Participant and Parent/Guardian understand and acknowledge that the University does not carry property insurance that applies to theft or loss of Participant’s personal property. Participant and Parent/Guardian understand that the University will not be responsible for any physical damage to or theft or loss of property owned by Participant.

7. Governing Law. This Release shall be construed in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania, without regard to choice or conflicts of law provisions.

8. Construction and Scope of Agreement. The language of all parts of this Release shall in all
cases be construed as a whole, according to its fair meaning, and not strictly for or against any party. This Release is the only, sole, entire, and complete agreement of the parties relating in any way to the subject matter hereof. No statements, promises, or representations have been made by any party to any other, or relied upon, and no consideration has been offered or promised, other than as may be expressly provided herein. This Release supersedes any earlier written or oral understandings or agreements between the parties.

Participant and Parent/Guardian acknowledge that they have read this Release and understand its meaning and effect and agree to be legally bound by its terms.

Participant Signature: ___________________________ Date: ______________

Parent/Guardian Signature: ________________________ Date: ______________

Emergency Contact Name: __________________________

Emergency Contact Telephone Number: ___________________