Minors In Laboratories Plan

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<table>
<thead>
<tr>
<th>Revision Number</th>
<th>Revision Date</th>
<th>Revised By</th>
<th>Description of Change</th>
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<tbody>
<tr>
<td>00</td>
<td>9/22/2021</td>
<td>Selvin McLean</td>
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<td>Selvin McLean</td>
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MINORS IN LABORATORIES PLAN

PURPOSE

In keeping with Florida Institute of Technology (Florida Tech)’s mission of education and outreach, it may be appropriate for persons under the age of eighteen years to occasionally enter Florida Tech research laboratories or animal facilities for educational purposes.

The purpose of this plan is to identify under what circumstances and/or conditions minors will be allowed to visit, work or conduct research in Florida Tech research laboratories where hazardous materials are used or hazardous procedures are conducted, including animal facilities. These guidelines are necessary to help protect a minor’s health and safety and to provide reasonable measures to prevent harm arising from potential exposure to hazardous agents or conditions.

SCOPE

This plan covers all Florida Tech research laboratories where hazardous materials are used or hazardous procedures are conducted, animal facilities, animal procedure rooms, and animal housing areas.

This plan is directed to include all persons under age 18 whether students, employees or volunteers.

PLAN

1. Minors who participated in a previously approved official Florida Tech plan are not allowed in Florida Tech research facilities for any reason unless they have current approval. Approvals are based on specific projects and time frames of projects.

2. Minors are allowed to work or conduct research in laboratories (except as prohibited in #3 below) if the following requirements are met in full:

   a. The minor is supervised by the Principal Investigator/Sponsor or his or her designee at all times while in the laboratory and never left alone.

   b. The Florida Tech Plan titled; MINORS IN LABORATORIES PLAN has been read and understood. THE POTENTIAL HAZARDS INFORMATION & SIGNATURE SHEET & RELEASE OF LIABILITY has been reviewed and signed by the parent/legal guardian and minor and returned to EH&S by mail or by fax. (Located in Appendix A)

   c. A MINORS RESEARCH PROPOSAL REGISTRATION FORM is submitted to and approved by EH&S and, if necessary, by the Florida Tech Compliance & Risk Management Office, Florida Tech Institutional Biosafety Committee and the Institutional Animal Care and Use Committee, if animals are involved. (Located in Appendix A)
d. Hazard specific safety training is completed by the Principal Investigator/Sponsor with the minor.

e. Personal protective equipment, specific to the hazard, is provided to the minor with instructions for use and disposal. **At a minimum, and without exception, minors must wear safety glasses, lab coat, long pants/slacks, and closed toed shoes at all times while in a laboratory.** Gloves must be worn when handling hazardous materials.

f. The laboratory is in full compliance with all applicable Florida Tech safety programs and regulations.

3. **All Minors are prohibited from working with the following:**

   a. Recombinant or infectious agents designated as BSL-3, ABSL-3 or higher.

   b. Select agents, controlled substances, or explosives.

   c. Radioactive materials or radiation (X-rays, gamma etc.), or lasers.

   d. Acute Toxins (i.e., mammalian LD50 of ≤ 100 ug/kg body weight).

   e. Animal work that involves any of the above materials or equipment.

**ENFORCEMENT**

As with other plans affecting the use of hazardous materials, enforcement of this plan is the responsibility of the supervisor of the project or Principal Investigator.

**Parent/Legal Guardian Informed Consent and Permission to Work in Florida Tech Laboratories**  
(Required for individuals under the age of eighteen)

Florida Tech conducts cutting engineering and scientific research and is dedicated to providing a healthy and safe environment for its faculty, staff, students, and visitors, including minors participating in Florida Tech programs. However, engineering, and scientific research involves exposure to various hazards. When deciding to allow your child to participate in research projects conducted in Florida Tech laboratories and other site, you need to be aware of the potential hazards he or she may encounter. The following information provides the most common potential hazards but is not intended to be an exhaustive list of all potential hazards.

**Definitions**

**Allergens**  
Substances capable of producing an allergic reaction.

**Carcinogens**  
Substances capable of producing cancer.
Laboratories
Rooms in which hazardous chemicals, radiation, or biological materials are handled or stored

Minor
Any person who has not attained the age of 18 years.

Pathogens
Bacteria, viruses, Prions, fungi, parasites capable of causing diseases.

Principal Investigator/Sponsor
Person who is responsible for the research project or activity as well as the oversight of the participants in the research or activity, including any minors.

Recombinant materials
DNA that has been genetically engineered (altered), usually incorporating DNA from more than one species of organism.

Supervision
Management by overseeing the performance or operation of the person or group at all times in the laboratory or animal facility.

Transgenic
An organism that has had genes from another organism inserted into its genes.

Toxins
Poisonous substances produced by living organisms, plants and animals.

Volunteer
Any person who provides services to Florida Tech with no monetary or material compensation.

Zoonotic diseases
Diseases that can be passed from animals to humans.

Potential Hazards

Your child’s research project may involve one or more of the following potential hazards. A table is attached with examples. You can contact the lab manager or Environmental Health & Safety to obtain further information on specific hazards that may be used or encountered in the research laboratory.

Animals – can bite, scratch, and transmit zoonotic diseases, such as rabies, toxoplasmosis, pox virus, cat bite fever, rat bite fever, and various parasitic infections or release allergens.

Chemicals – can be unstable, making them reactive and prone to explosion. Potential injuries include skin and eye burns, respiratory problems, allergic reactions, skin, eye, and mucous membrane irritation, and illnesses.

Gas cylinders/compressed gasses – gas cylinders with compressed gasses can explode, causing injury from high-speed projectiles. Released gasses can cause eye and skin irritations, respiratory problems, light-headedness, asphyxiation, and fainting.

Lasers – device that emits light (electromagnetic radiation) and can cause eye and skin damage.
Pathogens – found in human, animal and plant tissue can cause infections and acute or chronic illnesses.

Mechanical/electrical equipment and instrumentation – can cause electrocution, burns, cuts, scrapes, and injuries from pinch points. High noise levels can cause hearing loss.

Radiation/irradiation – can cause skin and eye damage, cellular damage, and long-term health problems.

Recombinant materials/technology – can interact with the human body and its cells and produce potentially hazardous results.
APPENDIX A

RELEASE OF LIABILITY, WAIVER OF CLAIMS, EXPRESS ASSUMPTION OF RISKS, AND HOLD HARMLESS AGREEMENT

I HAVE READ, UNDERSTAND, and INITIALED the Laboratory Rules and Potential Hazard Information Sheet describing the potential risks and dangers associated with my child’s research project. I fully understand that there are potential risks and hazards associated with exposure to hazardous materials or substances.

I AGREE TO ALLOW my minor child to work in Florida Institute of Technology (Florida Tech) laboratories/shops and freely accept and assume all associated risks and hazards. I ALSO AGREE AND UNDERSTAND that my child’s research project may be suspended at any time, at the discretion of Florida Institute of Technology and its officers, agents, and employees, if the safety of my child, Florida Institute of Technology employees and/or other volunteers at Florida Institute of Technology become a concern.

I, for myself and my estate, heirs, administrators, executors, and assigns, hereby release and hold harmless the State of Florida, the Florida Tech Board of Trustees, and their officers, directors, employees, representatives, agents, and volunteers (collectively, the “Releases”), from any and all liability and responsibility whatsoever, however caused, for any and all damages, claims, or causes of action that I, my estate, heirs, administrators, executors, or assigns may have for any loss, illness, personal injury, death, or property damage arising out of, connected with, or in any manner pertaining to my child’s work in Florida Institute of Technology laboratories/shops, whether caused by the negligence of Releases or otherwise. I further hereby agree to defend, indemnify and hold harmless the Releases from any judgment, settlement, loss, liability, damage, or costs, including court costs and attorney fees that Releases may incur.

In signing this agreement, I acknowledge and represent that I have read and understand it and that I sign it voluntarily and for full and adequate consideration, fully intending to be bound by the same.

____________________________________
Printed Name of Minor Child

___________________________________     ______________________________
Signature of Parent/Legal Guardian     Printed Name of Parent/Legal Guardian

________________________
Date

I have read, understand, and will adhere to the Florida Tech Safety Policies. I understand that failure to comply with this Plan is dangerous to my health and safety and that I may be removed from the facility immediately for any failures or deviations in compliance.

___________________________________
Signature of Minor

___________________________________ Date
## Potential Hazard Information Sheet

<table>
<thead>
<tr>
<th>Definition</th>
<th>Hazards</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemicals</strong></td>
<td>Refined compound that could be in the form of a solid, liquid or gas. These may or may not be hazardous. Some compounds may have numerous hazard classifications (flammable, toxin &amp; carcinogen)</td>
<td>Carcinogens: may cause some sort of cancer with long term exposure - usually many years in the future</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benzene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teratogen: shown to affect the reproductive system of males &amp; females &amp; may cause birth defects in the developing fetus.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alcohol, thalidomide, X-rays</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ethidium Bromide, snake venom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acetone, Xylene, Alcohol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Peroxides, acrylamide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acids &amp; bases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cyanide</td>
</tr>
<tr>
<td><strong>Compressed Gases</strong></td>
<td>High-pressure cylinders that hold gases. These are usually large &amp; heavy. Gas may be harmless, toxic, corrosive, flammable</td>
<td>Physical hazard: Explosion hazard if they rupture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asphyxiant hazard if they vent the gas to the workplace &amp; it displaces oxygen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asphyxiant: Nitrogen, helium, any other nonoxygen gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flammable: Hydrogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toxic: Ammonia</td>
</tr>
<tr>
<td><strong>Radiation/Radioactive Materials</strong></td>
<td>High energy particles (alpha &amp; beta) or photon (X-rays, gamma)</td>
<td>Tissue &amp; Organ damage with high doses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uranium, Phosphorus$^{32}$, Sulfur$^{35}$, X-rays</td>
</tr>
<tr>
<td><strong>Physical hazards</strong></td>
<td>Hazards from noise, machinery, heat, cold, etc.</td>
<td>Tissue damage, hearing loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scraps, cuts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cold: liquid nitrogen, dry ice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Heat: burners</td>
</tr>
<tr>
<td><strong>Lasers</strong></td>
<td>Light Amplification by Stimulated Emission of Radiation</td>
<td>Eye damage and possible skin damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Class IIIB and IV, and open beam laser operation</td>
</tr>
</tbody>
</table>

Parent/Legal Guardian Initials: ____ Date: __________________
# Potential Hazard Information Sheet

<table>
<thead>
<tr>
<th>Definition</th>
<th>Hazards</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Biological Agents** | Living organisms or products of living organisms such as Viruses, Bacteria, Fungi, Prions & Parasites. Hazards from infection with these agents are organism dependent & can range from mild treatable to severe untreatable. Classification of hazard in four groups called biological safety levels with level 1 as the least hazard & level 4 as the extreme hazard. | Level 1 - No hazard Baker’s Yeast & E. coli K12  
Level 2 - Mild to severe illness Influenza, Polio & Salmonella  
Level 3 – Severe illness & possible death Tuberculosis & AIDS  
Level 4 – Not allowed at Florida Institute of Technology Hemorrhagic fever |
| **Recombinant DNA** | Genetically modified organisms with variations in genes within the organism. | Often unknown consequences once introduced to the human body. Viral vectors like Adeno & Adeno-associated viruses used to transfect or express genes. |
| **Toxins – Microbial, Plant, Animal** | Poisons produced by plants, living organisms or animals. | Tissue & organ damage or death. Plant – Ricin Animal – Fish & Snake venom Microbial – Staph, Tetanus |
RULES FOR MINORS WORKING IN LABORATORIES AND ANIMAL FACILITIES

1. Never work alone in any laboratory environment without direct, immediate adult supervision from the sponsor or someone designated by the sponsor.

2. Always wear the personal protective equipment as directed and dispose of it appropriately. This personal protective equipment (PPE) includes goggles, gloves, coats/gowns, and other face/body protection as dictated by the hazard being worked with or around. Always remove PPE when leaving the work area.

3. Always follow the instructions of the sponsor or laboratory supervisor.

4. Always report any accident (regardless of severity) immediately to the sponsor or laboratory supervisor.

5. Always keep your hands away from your face and wash them well with soap and water prior to leaving any laboratory area and after removing gloves.

6. Never eat, drink, chew gum, apply lip balm, or touch contact lenses while in any laboratory environment.

7. Always wear closed-toe shoes while in any laboratory.

8. Always tie back long hair to keep it out of all the hazards listed above.

9. Always wear clothing that reduces the amount of exposed skin.

10. Always ask questions if you don’t understand the safety requirements.

Parent/Legal Guardian Initials: ______ Date: ___________________
Minors Research Proposal Registration Form

(Please print, type or fill this form out on the computer)

Proposals are due at the EH&S Office at least 1 weeks prior to beginning the work.

Principal Investigator/Sponsor: _________________________  Department: _________________________

Phone: ______________________          Email: _______________________________

Student/Minor Name: __________________________________  Date of birth: _________________________

School: ______________________________

Is this project (check one)

Student Intern                     Volunteering

Employment                        Other (specify) ____________________________

Part of a Florida Tech Sponsored Program (which program?) ______________________________

Other (explain) ________________________________

This work will be performed in:   BLDG __________________, Room(s) ____________________________

Project Title:  _______________________________________________________________________________

Project Start Date: ______________                                                      Project End Date: _____________________
Materials and Equipment to be Used - Check and List all that apply:

<table>
<thead>
<tr>
<th>Chemicals</th>
<th>Biological Material</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable</td>
<td>Recombinant DNA</td>
<td>Fume Hood</td>
</tr>
<tr>
<td>Reactive</td>
<td>Bacteria</td>
<td>Biosafety Cabinet</td>
</tr>
<tr>
<td>Carcinogenic</td>
<td>Viruses</td>
<td>Laminar Clean Bench</td>
</tr>
<tr>
<td>Toxic</td>
<td>Fungi</td>
<td>Autoclave</td>
</tr>
<tr>
<td>Corrosive</td>
<td>Parasites</td>
<td>Centrifuge</td>
</tr>
<tr>
<td>Oxidizer</td>
<td>Human Source Material</td>
<td>Analytical Instruments</td>
</tr>
<tr>
<td>Cryogen</td>
<td>Insects</td>
<td>Industrial Machinery</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>Plants</td>
<td>Noise Producing Equip.</td>
</tr>
<tr>
<td>Gasses</td>
<td>Animals</td>
<td>Other Equipment</td>
</tr>
</tbody>
</table>

Project Description (attach separate sheet if necessary):

I AGREE TO SPONSOR (MINOR’S NAME) ____________________________, AND BY MY SIGNATURE BELOW, AGREE THAT:

- I have read, understand, and will adhere to Florida Tech Safety Policies and related hazards. The potential hazard information signature sheet is attached.

- I have completed this Minor’s Hazard Specific Safety Training. Training was conducted by doing the following:

  __________________________________________________________________________________________
  __________________________________________________________________________________________

- Personal protective equipment appropriate for, and specific to, laboratory hazards will be provided.

- This individual will be supervised at all times while in the laboratory and never left alone.

- My laboratory is in full compliance with all applicable Florida Institute of Technology safety programs and regulations.

___________________________________   __________________________________ Printed
Name of PI/Sponsor       Signature of PI/Sponsor

___________________________________ Date
Institutional Biosafety Committee (IBC) Approval
(if required) __________ __________

Institutional Animal Care and Use Committee (IACUC) Approval
(if required) __________ __________

Environmental Health & Safety (EH&S) Approval __________ __________

Please return this form to:
Florida Institute of Technology Environmental Health & Safety