PURPOSE:
The purpose of this policy is to identify when minors will be allowed to work or conduct research in a University of Kentucky (herein after UK) research laboratory, greenhouse, or animal facility.

DEFINITIONS:
“Animal Facility” means any UK property where animals are housed.

“Laboratory” means any building or part of a building used or intended to be used for scientific or technical work which may be hazardous, including research, quality control, testing, teaching, or analysis.

“Minor” means any person who has not attained the age of 18 years.

“Research” means an active, diligent, and systematic process of inquiry in order to discover, interpret, or revise facts, events, behaviors, or theories, or to make practical applications with the help of such facts, laws, or theories.

“Select Agent” means biological agent or toxin listed in 73 CFR part 4 and 9 CFR part 121.4.

“Visitor” means any person who enters a laboratory, greenhouse, or animal facility upon the express or implied invitation of the laboratory director/supervisor.

“Volunteer” means any person who, of his or her own free will, provides services to UK for civic, charitable, or humanitarian reasons without promise, expectation, or receipt of compensation.

SCOPE:
This policy covers all UK research laboratories, greenhouses, animal facilities, animal procedure rooms, animal housing areas, and clinical laboratories.

This policy is directed to include all persons under age 18 whether students, employees, or volunteers. Minors under the age of 14 are NOT PERMITTED inside of any research laboratory, greenhouse, or animal facility at the University of Kentucky. An exception is allowed for UK sponsored programs which are designed for youth under the age of 14 and which have documented training policies.

*Visiting minors, not previously approved as part of a UK program, tour, or science fair, are not allowed in any UK research laboratory, greenhouse, or animal facility for any reason*

POLICY:
Unless enrolled as a UK student, minors are not allowed to work or conduct research in UK research laboratories, greenhouses, or animal facilities except as identified specifically below. In addition, minors are prohibited from operating farm machinery or state vehicles and from working in machine shops.

1. All minors are prohibited from working or conducting research in the following:
a. Any laboratory or facility designated as BSL-3, ABSL-3, or higher for recombinant or infectious organisms.
b. Any laboratory where select agents or explosives are used or stored.

2. All minors are prohibited from working with any of the following materials:
   a. Radioactive materials or radiation (X-rays)
      1. Minors should not be present if radio-labeled materials are in use.
   b. Acute Toxins

3. Regardless of the time interval, minors who work in any capacity with animals must be added to an Animal Care and Use protocol currently approved by the IACUC. Minors who are students must review the Occupational Health packet and sign the form titled Employee Education Program. The Animal Worker’s Questionnaire must also be completed by any minor (or any student who is a minor). LATA training, appropriate to the species of animal handled, is mandatory. Contact the University’s Veterinarian Office at 257-2934 for help with these items. Successful completion of these requirements allows the minor access to animals in the vivarium as well as research laboratories.

4. Minors are allowed to work or conduct research in laboratories (not listed in #1 above) if all of the following requirements are met:
   a. The UK EH&S Policy titled MINORS IN RESEARCH LABORATORIES OR ANIMAL FACILITIES has been read and understood by the minor.
   b. THE POTENTIAL HAZARDS INFORMATION SHEET has been reviewed by the minor and parent/legal guardian.
   c. A MINORS RESEARCH PROPOSAL REGISTRATION FORM, with sponsor’s, parent’s, and minor’s signatures acknowledging the “Potential Hazards,” and a UK “Minors in Research Laboratories or Animal Facilities” policy are submitted to and approved by the UK Environmental Health and Safety Division (EH&S). If infectious agents or recombinant DNA are manipulated in the research the UK Institutional Biosafety Committee must also review and grant approval.
   d. Hazard specific safety training and the appropriate UK EH&S online training is completed by the minor with the Principal Investigator/Sponsor as approved by EH&S.
   e. The minor is informed of the proper fire emergency/evacuation policies and procedures specific to both the laboratory and department. This information will include, but not be limited to, what happens when one dials 911, how/where to activate fire alarms, evacuation routes, and how to detect natural gas odors. Minors shall not be responsible for extinguishing a fire. Under no circumstance should a minor attempt to extinguish a fire with any type of “tool”. The primary concern is personal safety. The secondary concern is notification of the fire department/ 911.
   f. Personal protective equipment, specific to the hazard, is provided to the minor with instructions for use and disposal.
   g. The minor is supervised at all times while in the laboratory and never left alone.
   h. Hours of work comply with Federal Regulation 29 CFR 570.35.
   i. The laboratory is in full compliance with all applicable UK safety programs and regulations.
POTENTIAL HAZARD INFORMATION SHEET

Scientific research involves exposure to various hazards. When deciding to allow your child to participate in research projects conducted in University of Kentucky laboratories, greenhouses or animal facilities, 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. Questions may be addressed to the minor’s specific sponsor. If you have any further questions or concerns regarding this information, please contact the Director of Occupational Health and Safety (Lee Poore at lpoor2@email.uky.edu or 257-2924) or the Biological Safety Officer (Marcia Finucane at mfinu2@email.uky.edu or 257-1049).

Definitions

Allergens – substances capable of producing an allergic reaction.
Asphyxiant – a substance such as a gas or a toxin that causes a decrease in oxygen concentration or an increase of carbon dioxide concentration within the body.
Carcinogens – substances capable of producing cancer.
Mutagenic – agent (chemical or physical) capable of inducing genetic mutation.
Pathogens – bacteria, viruses, prions, fungi, and parasites capable of causing diseases.
Recombinant materials – DNA that has been genetically engineered (altered), usually incorporating DNA from more than one species of organism.
Transgenic – an organism that has had genes from another organism inserted into its genes.
Toxins – poisonous substances produced by living organisms, plants and animals.
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.

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.
Pathogens – found in human, animal and plant tissue can cause infections and acute or chronic illnesses.
Recombinant materials/technology – can interact with the human body and its cells and produce potentially hazardous results.
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.
Animals – can bite, scratch, transmit zoonotic diseases, such as rabies, toxoplasmosis, pox virus, cat bite fever, rat bite fever, and various parasitic infections, or release allergens.
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.
<table>
<thead>
<tr>
<th>Definition</th>
<th>Hazards</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</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>
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<td>Teratogen: shown to affect the reproductive system of males &amp; females. May cause birth defects in the developing fetus.</td>
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<td>Neurotoxins: may affect the nervous system.</td>
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<td>Flammables: will burn or explode.</td>
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<td>Reactives: will react explosively.</td>
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<td></td>
<td>Corrosives: will cause tissue damage with contact through inhalation, eye, skin, etc.</td>
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<td>Toxins: May cause illness or death on exposure.</td>
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<tr>
<td>Compressed Gases</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. Asphyxiant hazard if they vent the gas to the workplace &amp; it displaces oxygen.</td>
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<tr>
<td>Radiation/Radioactive Materials</td>
<td>High energy particles (alpha &amp; beta) or waves (X-rays).</td>
<td>Tissue &amp; Organ damage with high doses.</td>
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<tr>
<td>Physical hazards</td>
<td>Hazards from noise, machinery, heat, cold, etc.</td>
<td>Tissue damage and hearing loss.</td>
</tr>
<tr>
<td>Definition</td>
<td>Hazards</td>
<td>Examples</td>
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<tr>
<td><strong>Biological Agents</strong></td>
<td>Living organisms or products of living organisms such as Viruses, Bacteria, Fungi, Prions &amp; Parasites. Hazards from infection with these agents are organism dependent &amp; can range from mild and treatable to severe and untreatable. Classification of hazard in four groups called biological safety levels with level 1 as the least hazard &amp; level 4 as the extreme hazard.</td>
<td>Level 1 - No hazard. Baker's Yeast &amp; E. coli K12</td>
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<td>Level 2 - Mild to severe illness.</td>
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<td>Level 3 – Severe illness &amp; possible death.</td>
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<td>Level 4 – Not allowed at the University of Kentucky.</td>
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<tr>
<td><strong>Recombinant DNA</strong></td>
<td>Genetically modified organisms with variations in genes within the organism.</td>
<td>Often unknown consequences once introduced to the human body.</td>
</tr>
<tr>
<td><strong>Toxins – Microbial, Plant, Animal</strong></td>
<td>Poisons produced by plants, living organisms or animals.</td>
<td>Tissue &amp; organ damage or death.</td>
</tr>
</tbody>
</table>
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 follow the instructions of the sponsor or laboratory supervisor.

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

4. Always wear the personal protective equipment as directed and dispose of it appropriately. This personal protective equipment includes glasses, gloves, coats/gowns, and other face/body protection as dictated by the hazard being worked with or around.

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

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. Shorts and sandals are prohibited in the laboratory.

10. Always ask questions if you don’t understand the safety requirements.
The “Minors Research Proposal” and the “Consent/Signature Sheet” must be filled out and returned to EH&S before the student may participate in research activities. Send forms to Environmental Health and Safety, Attn: BSO, 252 E. Maxwell St., Lexington KY 40506-0314 or fax (859) 257-8787.

Please use the computer to fill out this form. Hand-written Signatures are required

If you have any questions or concerns regarding this form, please contact the Director of Occupational Health and Safety (Lee Poore at lpoor2@email.uky.edu or 257-2924) or the Biological Safety Officer, (Marcia Finucane at mfinu2@email.uky.edu or 257-1049).

Proposals are due at the EH&S Office, Attn: BSO, at least 2 weeks prior to the minor beginning work.

General Information:
Principal Investigator/Sponsor: Joe Chappell, David Hildebrand
Department: Plant Science
Address/Box: 403 PSB, 0312
Phone:2575020x80760 Email: dhild@uky.edu
Student/Minor Name: Date of Birth:
School: 4-H YD
Is this project (check one)
  Science Fair Project ☐ Volunteering ☐ Employment ☐ Other ☐
Part of UK Sponsored Program: Yes (which program?) College of Ag4-H YD Teen Conference
No (explain)

This work will be performed in: BLDG PSB, Room(s) 109
Project Title: Biotechnology & DNA Science in Action, CSI

Project Start Date: June 10, 2008
Project End Date: June 11, 2008

Materials and Equipment to be used – CHECK AND LIST all that apply

Chemicals
☐ Flammable ☐ Reactive ☐ Carcinogenic ☐ Toxic ☐ Corrosive ☐ Oxidizer ☐ Cryogen ☐ Pharmaceuticals ☐ Gasses

Biological Material
☐ Recombinant DNA ☐ Bacteria ☐ Viruses ☐ Fungi ☐ Parasites ☐ Human Source Material ☐ Insects ☐ Plants ☐ Animals

Equipment
☐ Fume Hood ☐ Biosafety Cabinet ☐ Laminar Clean Bench ☐ Autoclave ☐ Centrifuge ☐ Analytical Instruments ☐ Industrial Machinery ☐ Noise Producing Equip. ☐ Other Equipment

Project Description: (Attach separate sheet)
Consent/Signature Sheet

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

- I have read, understand and will adhere to the UK “Minors in Research Laboratories or Animal Facilities” Policy (http://ehs.uky.edu/biosafety/). An EH&S approval must be granted before the minor may participate.
- I have completed this Minor’s Hazard Specific Safety Training by doing the following:
  - Personal protective equipment appropriate for, and specific to, laboratory hazards will be provided.
  - This minor will be supervised at all times while in the laboratory and never left alone.
  - The minor’s hours of work will comply with Federal Regulation 29 CFR 570.35.
  - My laboratory is in full compliance with all applicable University of Kentucky safety programs and regulations.

Name of PI/Sponsor

__________________________________  ____________________
Signature                        Date

Student:
- I have read and understand the “Potential Hazards” handout explaining the hazards involved in scientific research.
- I will adhere to the UK “Minors in Research Laboratories or Animal Facilities” Policy (http://ehs.uky.edu/biosafety) in order to protect myself and those around me from an accidental exposure.

Name of Minor

__________________________________  ____________________
Signature                        Date

Parent/Legal Guardian:
- I HAVE READ AND UNDERSTAND the Potential Hazard Information Sheet describing the potential risks and dangers associated with my child’s research project.
- I AGREE AND UNDERSTAND that my child’s research project may be suspended at any time, at the discretion of the University of Kentucky and its officers, agents, and employees, if the safety of my child, the employees and other volunteers of the University of Kentucky become a concern.

Parent’s/Legal Guardian’s Name

__________________________________  ____________________
Signature                        Date