Resource Guide for Research Experiences Involving High School Students

This document establishes guidelines for all UM (Oxford campus) research involving high school students as Program Participants or Co-researchers. These guidelines establish a protocol for faculty and staff mentors involving high school students in research, in accordance with all applicable University policies. These guidelines do not replace or override an active UM policy. A complementary document to this one is the Minors in Labs Fact Sheet maintained by the UM Department of Health and Safety. All existing or planned research programs involving high school students (e.g., ARISE@UM, Heads in the Game, Nanotechnology, Renewable Energy Lab, and the Research Program in Catalysis) should adhere to these guidelines, as should any other situations involving high school students as researchers, whether or not the students are deemed program participants, and whether or not they are working on projects supported by external grants or contracts.

The Office of Pre-College Programs in the Division of Outreach and the Office of Research and Sponsored Programs will share ownership for maintaining and promoting adherence to these guidelines in the establishment and conduct of research involving high school students. An Advisory Committee will provide input on health, safety, and procedural matters related to high school students in research.

High School Research Participants (High School Participants). High School Participants will engage in a Research Experience under the supervision of a designated UM Mentor (Mentor). Mentors may be assisted in this supervision by other employees or by graduate or undergraduate students with research or research support responsibilities (Assistant Mentors). A Participant’s Mentor and Assistant Mentors make up his/her Mentor Team. During the Research Experience, the Participant will undertake and complete a research project (Project) defined and supervised by the Mentor.

Many Research Experiences will require that Participants spend time (Lab Research Hours) engaging in research and experiments (Lab Research Activities) in a designated research laboratory or field site (Lab) that may have specialized equipment, materials, and/or controlled conditions. A Participant will only engage in Lab Research Activities within a Lab that is managed by that Participant’s Mentor; and under the close supervision of that Participant’s Mentor Team. Furthermore, each Mentor will ensure that none of his/her own Assigned Participants, nor any other High School Participant, is ever left unattended in the Lab. Mentors will maintain a Lab sign-in/out form and ensure that of their own Assigned Participants “sign in” upon entering the Mentor’s Lab, and “sign out” upon exit.

In addition to Lab Research Activities, Participants may be required by their Mentors to engage in additional activities—activities that do not require access to the Lab, but that nevertheless advance either the project or the Participant’s academic/career development. These Non-Lab Research Activities will take place under the supervision of the Mentor Team, in one or more designated Non-Lab Research Spaces (e.g., offices or common areas) within the building of the Mentor’s home department or research center. Together, the Lab where a Participant will be conducting Lab Research Activities, and the designated Non-Lab Research Space(s) where a
Participant will be conducting Non-Lab Research Activities, will compose that Participant’s Research Environment. Each Mentor will be responsible for ensuring that all of his/her Assigned Participants are appropriately supervised (consistent with the requirements in this document) during all times spent (Research Hours) in their designated Research Environments.

Students as Subjects
If data is being kept on High School Student Research Participants to track interest or progress for research purposes, the Mentor should follow the protocols regarding IRB approval.

Permanent UM employees who are eligible to serve as a PI on a UM sponsored project (per UM Policy Number 10000651: Definition of a Principal Investigator) may submit an application to an Advisory Committee requesting endorsement as a Mentor for one or more proposed High School Student Research Experiences. Applications should be send to the Advisory Committee (hsradvisory@olemiss.edu), and must include:

1. **Project Time Requirements**, including:
   a. **Required Research Hours**: anticipated total number of supervised hours required by the Participant to conduct and complete the research project. This should broken down into: *Lab Research Hours* (Participant hours required to be spent inside the Lab, such as for setting up, conducting, and documenting experiments, etc.) and *Non-Lab Research Hours* (Participant hours required on Non-Lab Research Activities to complete the assigned project, such as for reading scientific literature, preparing posters, or writing journal articles, etc.) If the project scope is flexible, to accommodate variations in applicants’ availability, the Required Research Hours may be specified as a range (e.g., 200–250 hours).
   b. **Required Research Days**: anticipated number of working days over which the Required Research Hours could be spread, as a range (e.g., 20 – 50 days).
   c. **Research Calendar Days**: anticipated calendar months, weeks, or days over which the Required Research Days and the Required Research Hours could be spread (and for which Mentor/Assistant Mentor supervision will be made available).

2. **Project Title**: a short, descriptive title of the proposed research project.

3. **Project Description**: 4,000 character or less a description the project, including the goals, objectives, and proposed outcomes for the project period, the experimental activities to be conducted, and expected responsibilities of the Participant.

4. **Health, Safety, and Compliance Statement**: a statement prepared by the Mentor detailing any standard Health & Safety policy/risks that apply to the proposed research project and outlining, if applicable, any remarkable/exceptional risks not covered by the standard policies. Before the Research Experience can begin, this statement must be read, understood, and signed, by each of the following, in order:
   a. the Mentor
   b. the Mentor’s Chair (or immediate supervisor)
   c. the Health and Safety representative on the Supervisory Committee (if applicable)
   d. the University Attorney’s representative on the Supervisory Committee
   e. the Participant
   f. a Parent or Legal Guardian

5. **Preliminary Research Supervision Plan**: a preliminary plan describing how the Mentor proposes to provide appropriate guidance, mentorship, and supervision of the Participant
during the conduct of Research Activities. Before the experience begins, a Final Supervision Plan must be submitted to and approved/signed by the same individuals who must sign the Health, Safety, and Compliance statement. The Supervision Plan will describe how the Mentor and any Assistant Mentor(s) will:

a. facilitate the High School Participant’s contribution to the completion of the project
b. facilitate the High School Participant’s development of research skills and career awareness
c. ensure that all High School Participants complete UM Health and Safety training workshops appropriate to their department/project before allowing the students to begin research work in Labs.
d. ensure all of the High School Participant’s Research Hours are appropriately supervised by the Mentor and any Assistant Mentors, in keeping with all applicable Health and Safety regulations/standards as defined by a set of university policies identified by the Advisory Committee, including: the Biological Safety Manual Policy (#10000299), the Radiological Safety Manual Policy (#10000289), the Chemical Safety Manual Policy (#10000302), and the Supervision of Minors Policy (#10000843)1—see the section below on

6. Participant Funding Plan: Mentors will submit a plan for whether, how, and from what source, each proposed (perhaps initially unidentified) Participant will receive funds for participating in the Summer Research Experience. For instance, one from a grant or from a mentor’s overhead account; as hourly wages, a monthly salary stipend, a financial aid dispersal, a vendor payment, or some combination; or as non-paid work (if allowable). Once a Participant has been matched to a Mentor, the plan must be finalized. The preliminary and final plans must be approved by:

a. the Mentor
b. the Mentor’s Chair
c. the VCRSP representative on the Advisory Committee
d. the HR representative on the Advisory Committee
e. the Financial Aid representative on the Advisory Committee (if applicable)
f. the Procurement representative on the Advisory Committee (if applicable)
g. the Outreach representative on the Advisory Committee

Per University policy, High School Participants under the age of 18 will not be allowed to work on projects that involve radioactivity, and High School Participants under the age of 16 will not be allowed to be/work in areas where hazardous (chemical) materials are used or stored.

High School Participants and their Guardians will be required to sign a statement agreeing to follow all lab/program rules at all times. In the event that a High School Participant is reported to be acting in an irresponsible or malicious manner, the immediate action will be taken to remove the High School Participant from the lab/research environment.

Advisory Committee

1 https://secure4.olemiss.edu/umpolicyopen/ShowDetails.jsp?istatPara=1&policyObjidPara=11619450

ResourceGuideforUMHighSchoolStudentResearch-v5.docx September 14, 2016
A High School Research Advisory Committee (Advisory Committee) made up of UM employees will provide collective input and guidance on matters of safety, policy, and administration for high school research experiences; review applications from prospective mentors; and issue endorsements to qualifying mentors whose applications appear consistent with these guidelines. The Advisory Committee will be made up of each of (or a designated representative from) the following:

- the Office of the Vice Chancellor for Research and Sponsored Programs (to advise to ensure high quality, consistent research experiences for Program Participants, and clarity for Mentors on what is expected of them; to advise on how to compete for and leverage external grants and sponsored programs to enable more students to participate; to advocate for the program)
- the Office of the University Attorney (to advise on issues of policy and risk to the institution, Program Participants, and individual employees)
- the Department of Health and Safety (to advise on issues of policy and safety in labs)
- the Division of Outreach and Continuing Education (to advise on issues related to issues of recruiting, housing, feeding, supervising, and providing non-research-hours programming for Program Participants)
- the Institutional Review Board or Division of Research Integrity and Compliance (to advise on collection and use of data about Participants, including outcomes)
- the University Research Board
- the Department of Human Resources (to advise on paying UM Participants or student Assistant Mentors)
- the Office of Financial Aid (to advise on scholarships for UM Participants)
- the Office of Procurement Services (to advise on paying non-UM Student Participants as vendors)
- the Dean of the Graduate School (to advise on activities involving graduate students as Participants or Assistant Mentors, and in matters related to the development of Undergraduate Participants as potential future graduate students).
- College of Liberal Arts

The Advisory Committee will meet in January, March, May, and September to consider applications from prospective mentors. For Research Experiences planned for the summer, all final plans must be in place by May 15 before the summer experience begins to allow for background checks and Supervision of Minors training to be completed.

**Participation of Minors**

All Mentors and Assistant Mentors acting as Authorized Adults\(^2\) must comply with the UM Supervision of Minors\(^3\) policy. Some terms of that policy are listed below.

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\(^2\) UM defines an Authorized Adult as Program Staff eighteen (18) years or older who supervise, chaperone, or otherwise oversee Minors in Programs. This includes but is not limited to, faculty, staff, volunteers, graduate and undergraduate students, interns, employees of temporary employment agencies, and independent contractors/consultants.

\(^3\) UM defines a “minor” as any individual under the age of 18 OR not enrolled as a university student.
• No person 18 years of age or older shall have One-On-One Contact with Minors.
• Duty to Report: If any person has reason to suspect that a Minor has been subject to neglect or abuse, he or she must:
  o Inform the Mississippi Department of Human Services by calling the Abuse hotline (800-222-8000) and provide written notification to the Department of Human Services as soon thereafter as possible. See Miss. Code Ann. § 43-21-353
  o Inform the University Police Department (662-915-7234) or other appropriate law enforcement agency, and if the suspected assault or abuse presents an imminent danger to a Minor, contact should occur immediately.
  o If the Minor is a participant in a Program, inform the Program Director immediately. The Program Director will immediately notify the University Police Department and the Title IX Coordinator or designee. If the Program Director may be involved in the suspected assault or abuse the person should report the suspected assault or abuse to the University’s Title IX Coordinator or designee (662-915-7045).
• “See Something, Say Something”: If any person witnesses a violation of this policy, such as One-on-One Contact, or anything that gives rise to concern for the health or safety of a Minor, that person shall immediately notify the University’s Title IX Coordinator or designee (662-915-7045).

The Office of Pre-College Programs in the Division of Outreach and the Office of Research and Sponsored Programs will ensure that all active Mentors and Assistant Mentors have completed background checks (must be renewed every 3 years) and have completed the Supervision of Minors Training (certification must be renewed yearly) through the UM Title IX Coordinator: http://eorc.olemiss.edu/minors/. In general, the Mentor’s department will be responsible for the cost of the background checks. Mentors must designate an Authorized Adult at least 21 years of age to be on-call and accessible to program participants at all times.

Participant Requirements and Application Components

High School Participants must meet the following criteria or arrange to provide the following in their application to any research program:4
  1. Rising 9th (i.e., completed 8th grade) through 12th grade (including individuals who may have graduated from high school just prior to the summer) are eligible. Home-schooled applicants will need a letter from a Guardian certifying their grade status (or other valid alternative certification).
  2. Set of signed consent forms (see below) including Guardian Consent form acknowledging the realities of working in a university lab setting and the risks associated with the proposed research project (both standard risks and unusual risks will be specified).

Decisions (and exceptions) for acceptance for each lab or program will ultimately be determined at the discretion of the affiliated Mentor(s).

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4 Note: A mentor may request specific guidelines beyond/or in lieu of the requirements listed in this document, i.e. GPA requirements, ACT score, etc.
High School Participants will not be permitted the Labs earlier than 8:30 am or no later than 4:30 pm on any day.

The precise length of the Research Experience should be reviewed by the Advisory Committee prior to the start of the experience, along with any anticipated vacation breaks within this period.

High School Participant acceptance forms will include the following:
1. Participant/Guardian Consent (transcripts, publicity, involvement in longitudinal study
2. Medical Treatment Consent and Liability Release
3. Participants in Labs Consent
4. Misconduct Dismissal Agreement
5. Good Faith Commitment to Stay in Touch with mentor and the Office of Pre-College Programs, members of which may contact previous High School Participants using credentials that originate from the university (e.g., university-issued email accounts only, not personal accounts). Contact may be via letters, e-mail, and phone call from a university phone number (not video chat, text message, social media messaging, or personal telephone, etc.). Program Twitter and Facebook accounts (with at least 2 public administrative contacts actively receiving any correspondence notifications) may be used to post announcements to groups of Participants.
6. Health, Safety, and Compliance Statement
7. Supervision Plan

High School Participants – Residential

High School Participants who wish to reside on campus will need to apply to the appropriate program offered through the UM Pre-College Program, managed by the UM Division of Outreach and Continuing Education. If accepted, these Residential Participants’ time outside of their designated Research Hours will be managed through the Pre-College program. This includes personal time, sleeping arrangements, meals, and off-hours programming appropriate for the age of the student. As such, these Residential High School Participants will be required to follow all rules and regulations of the UM Pre-College Program. Outreach will be responsible for appropriate supervision of these students during all off-hours.

High School Participants and their Guardians must sign the Pre-College Program's parent/student consent form, general guidelines and rules for the specific program, ID form, learning style questionnaire, medical treatment consent and liability release form.

Generally, High School Participants and/or their Mentors (through authorized university or sponsored program accounts) will be responsible for the costs associated with the housing, meals, and program fees for the Pre-College Program in which the student is enrolled.

Participants – Non-residential

Non-residential students should report to the lab no earlier than 8:30 a.m. and should exit the lab no later than 4:30.
If the research internship is eligible for UM credit, students may receive half-tuition through the UM Dual Credit Program through the Office of Pre-College Programs in the Division of Outreach.

Participant parking passes should be obtained through UM Parking Services. Participant meal plans can be purchased through UM Dining Services. The Office of Pre-College Programs can help facilitate this process but should not be held responsible for providing these services.

Students – Dual Credit

UM credit is available for the research experience through BISC 100 or LIBA 103 if the student research time meets the required number of seat hours.

BISC 100: Research Internship. High school or community college students participate in a research experience with the mentorship of a biology faculty member. Students will learn how the scientific method is applied in a research setting, develop practical communication and scientific writing skills, and engage in STEM career discussions. Course may not be counted towards a major or minor in biological science. This course may be repeated for credit with a maximum of 6 credits. Z-graded. Prerequisite: Approval of supervising faculty member. (1-3)

LIBA 103: STEM Research Internship. High school or community college students will participate in a research experience with the mentorship of a STEM faculty member. Students will learn about how the scientific method is applied in a research setting, develop practical communication and scientific writing skills, and engage in STEM career discussions. This course may be repeated for credit with a maximum of 6 credits. Z-graded. Prerequisite: Approval of supervising faculty member. (1-3)

DEFINITIONS:

High School Participant: A current, rising or recently graduated high school student involved in research at UM.

Student Program Participant: A high school, undergraduate, or other student who has applied and been accepted to an Approved Student Traineeship Program at UM.

Student Co-Investigator: A student participating in research as a co-investigator who is not a participant in an Approved Student Traineeship Program at UM.

Student Research Subject: A student who is the subject of research study being conducted by a UM researcher.

Advisory Committee: A group of UM employees who provide collective input and guidance for mentors of high school students involved in research, on matters of safety, policy, and
administration. Consists of each of (or a designated representative from) the following:

- the Office of the Vice Chancellor for Research and Sponsored Programs (to advise to ensure high quality, consistent research experiences for Program Participants, and clarity for Mentors on what is expected of them; to advise on how to compete for and leverage external grants and sponsored programs to enable more students to participate; to advocate for the program)
- the Office of the University Attorney (to advise on issues of policy and risk to the institution, Program Participants, and individual employees)
- the Department of Health and Safety (to advise on issues of policy and safety in labs)
- the Division of Outreach and Continuing Education (to advise on issues related to issues of recruiting, housing, feeding, supervising, and providing non-research-hours programming for Program Participants)
- the Institutional Review Board or Division of Research Integrity and Compliance (to advise on collection and use of data about Participants, including outcomes)
- the University Research Board
- the Department of Human Resources (to advise on paying UM Participants or student Assistant Mentors)
- the Office of Financial Aid (to advise on scholarships for UM Participants)
- the Office of Procurement Services (to advise on paying non-UM Student Participants as vendors)
- the Dean of the Graduate School (to advise on activities involving graduate students as Participants or Assistant Mentors, and in matters related to the development of Undergraduate Participants as potential future graduate students).

Assistant Mentor: UM employee or student employee who assists the Mentor in the supervision of students during Research Lab Activities.

Assigned Participants: The Program Participants that are assigned to (supervised) a given Mentor.

Guardian: One of a Program Participants parents or legal guardians.

Health and Safety Statement: an appropriately signed statement detailing any standard Health & Safety policy/risks that apply to the proposed research project and outlining, if applicable, any remarkable/exceptional risks not covered by the standard policies.

High School Applicants: Rising high school students, and individuals who will have just completed their senior year of high school prior to the beginning of the summer being applied to, are eligible to apply to be High School Participants.
Lab: a research laboratory of field site, which may or may not have specialized equipment, or a controlled atmosphere.

Lab Research Activities: activities that are required of a Program Participant that must take place in a Lab.

Lab Research Days: the days (and number of days) designated by the Mentor, during which a Program Participant will be conducting Lab Research Activities.

Lab Research Hours: the hours (and number of hours) that a Program Participant will be expected to, and will, engage in Lab Research Activities.

Mentor: a UM faculty or staff researcher who applies to, is selected to, and provide supervision of one or more Program Participants in a Research Experience, possibly with the assistance of one or more Assistant Mentors.

Mentor Team: The Mentor and all Assistant Mentors who will supervise a Program Participant in a Research Experience.

Minor: Any non-UM student under the age of 18

Non-Lab Research Hours: The hours spent by a Program Participant conducting research Mentor-supervised research activities outside of a Lab.

Non-Lab Research Activities: Research activities required of Participants by their Mentors that do not require access to the Lab, but that nevertheless advance either the project or the Participant’s academic/career development. For example, reviewing scientific literature or preparing reports of research findings for publication.

Non-Lab Research Spaces: Designated physical locations where required, supervised Non-Lab Research Activities will take place. For instance, offices, conference rooms, or common areas.

Participant Cohort: All of the Program Participants in a particular summer.

Program Participants: All of the High School Participants

Project: A research project and scope of work, defined by a Mentor, approved by [ ], and possibly negotiated with a Participant, that a Participant will undertake and complete during a Research Experience, under the Mentor’s supervision. Each project will have a pre-defined set of goals, objectives, and outcomes.

Project Description: A Mentor-defined description of a proposed research project that a Participant may undertake and complete. The description will need to be approved by [], and will be used to match Applicants with Projects.
**Required Research Hours**: The anticipated total number of hours that the Mentor estimates will be necessary for the Participant to spend during the Research Experience to complete the assigned Project. May be estimated as a range that is negotiated/finalized based on the availability of matching Applicants.

**Required Research Days**: The anticipated total number of days over which the Mentor estimates the Required Research Hours will or can be spread. May be estimated as a range that is negotiated/finalized based on the availability of matching Applicants.

**Research Calendar Days**: The prospective dates, and ultimately, the final approved list of dates on which the Participants will be expected to participate in Research Activities, and on which the Mentor commits to providing supervision.

**Research Calendar**: The list of Research Days that a Mentor will designate that a Participant will spend conducting supervised research during a Research Experience.

**Research Days**: Days that a Program Participant spends doing supervised Research Activities.

**Research Environment**: The designated combination of Labs and Non-Lab Research spaces where a Program Participant’s supervised Research Activities will take place under the supervision of his or Mentor Team.

**Research Experience**: The collection of activities in which the Program Participant will engage.

**Summer Research Experience**: A Research Experience that starts and ends in the same summer.

**Research Supervision Plan**: The plan describing how the Mentor proposes to provide appropriate guidance, mentorship, and supervision of the Participant.

**UM Pre-College Program**: Located in the Division of Outreach, The Office of Pre-College Programs serves to provide programs that challenge, enrich, and further the educational experiences of K-12 students.

**UM Dual Credit Program**: Located in the Office of Pre-College Programs, the UM Dual Credit Program facilitates student enrollment in UM courses for secondary students seeking UM credit.