

Student Checklist (1A)

This form is required for ALL projects.

1. a. Student/Team Leader: David Xiang Grade: 11
Email: daxiancs21@herricksk12.org Phone: (516)688-5883
b. Team Member: _____ c. Team Member: _____
2. Title of Project:
Heparin-Conjugated Bioactive Glue for Regeneration of Lubricin-infiltrated Meniscus Tears by Recruitment of Stem/Progenitor Cells
3. School: Herricks High School School Phone: (516)305-8700
School Address: 100 Shelter Rock Rd, New Hyde Park, NY 11040
4. Adult Sponsor: Chang Lee Phone/Email: 212-305-1920 / chl2109@cumc.columbia.edu
5. Does this project need SRC/IRB/IACUC or other pre-approval? ☐ Yes ☒ No Tentative start date: 7/01/19
6. Is this a continuation/progression from a previous year? ☐ Yes ☒ No
If Yes:
a. Attach the previous year's ☐ Abstract and ☐ Research Plan/Project Summary
b. Explain how this project is new and different from previous years on
☐ Continuation/Research Progression Form (7)
7. This year's laboratory experiment/data collection:
07/01/19 08/23/19
Actual Start Date: (mm/dd/yy) End Date: (mm/dd/yy)
8. Where will you conduct your experimentation? (check all that apply)
☒ Research Institution ☐ School ☐ Field ☐ Home ☐ Other: _____
9. List name and address of all non-home and non-school work site(s):
Name: Columbia University
Address: 630 W. 168th street, VC12-211B, New York, NY 10032
Phone/ email: 212-305-1920 / chl2109@cumc.columbia.edu
10. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.
11. An abstract is required for all projects after experimentation.

Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

1. All projects must have a Research Plan/Project Summary
 - a. Written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
 - b. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
 - c. If no changes are made from the original research plan, no project summary is required.
2. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
3. The Research Plan/Project Summary should include the following:
 - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
 - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
 - c. Describe the following in detail:
 - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
 - **Risk and Safety:** Identify any potential risks and safety precautions needed.
 - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
 - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. **Human participants research:**
 - a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
 - b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
 - c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? If yes and not your own, how did you obtain? Did it require permissions? If so, explain. What is the frequency and length of time involved for each subject?
 - d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
 - e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
 - f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.
2. **Vertebrate animal research:**
 - a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.
 - b. Explain potential impact or contribution of this research.
 - c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
 - d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
 - e. Describe housing and oversight of daily care
 - f. Discuss disposition of the animals at the termination of the study.
3. **Potentially hazardous biological agents research:**
 - a. Give source of the organism and describe BSL assessment process and BSL determination.
 - b. Detail safety precautions and discuss methods of disposal.
4. **Hazardous chemicals, activities & devices:**
 - Describe Risk Assessment process, supervision, safety precautions and methods of disposal.
 - Material Safety Data Sheets are not necessary to submit with paperwork.