

SCIENCE FAIR PROJECT

LOGBOOK 2025

How can specific **DNA methylation patterns** enhance the early detection of **leukemia**?

Akshita Rawat, Gr. 10, STEM INNOVATION ACADEMY

Chose my SF'24 project <ul style="list-style-type: none">- Research- Life sciences- Molecular biology	Nov 03, 2024
Started research (basic idea) <ul style="list-style-type: none">- Did a mini literature review to understand basic concepts- Did a deep dive to derive my question for the project- Read articles (sources) and watched lessons to enhance my knowledge (had to consult my mom to grasp key concepts for cpg sites bonding and CH3 groups)	Nov 04, 2024
Created project timeline 📅 SF'24 - Timeline_Akshita Rawat and research document (Dec - Mar) <ul style="list-style-type: none">- Made separate docs to manage time and track progress- Accumulated all my resources, sources and research- Inserted deadlines and expectations into calendar and set reminders while managing other commitments and school	Dec 07, 2023
Registered project on CYSF <ul style="list-style-type: none">- Finished Ethics Due Care 2A form	Dec 08, 2024
Emailed Nishan Sharma ssalgia@ucalgary.ca (Manager, International Research and Innovation) - RSO	Dec 12, 2024

Emailed Shilpa Salgia ssalgia@ucalgary.ca (Specialist, Research Infrastructure and Facilities) - ACCI	Dec 12, 2024
Emailed Shweta Patel pats@ucalgary.ca (Research Navigator) - CCCR	Dec 12, 2024
Emailed the Trail Launch team at Arthur Child JE. Cancer Centre ArthurChild.TrialLaunch@albertahealthservices.ca	Dec 14, 2024
Emailed Dr. Victor Lewis vlewis@ucalgary.ca (Associate Director of Clinical Research and Translation (Pediatrics)) + Greg Dinwoodie greg.dinwoodie@ahs.ca (Assistant) - Riddell	Dec 22, 2024
Emailed Dr. Jon Mee jmee@mtroyal.ca (Chair, Department of Biology) + Dr. Kartika Tjandra ktjandra@mtroyal.ca (Biology Department Advisor) - MRU	Dec 22, 2024
Emailed Applied Research and Innovation Services applied.research@sait.ca - SAIT	Dec 22, 2024
Finished Leukemia Research <ul style="list-style-type: none"> - Took a while and a few changes - Question modification from “How can specific DNA methylation patterns in blood samples enhance the early detection of leukemia in adolescents?” to “How can specific DNA methylation patterns enhance the early detection of leukemia?” 	Jan 03, 2025
Finished Current Methods Research <ul style="list-style-type: none"> - Was simple and I think is a strong backbone for my results 	Feb 13, 2025
Finished Epigenetic Biomarkers Research <ul style="list-style-type: none"> - Found cool photos and watched a few videos to get a strong grasp on the concept 	Feb 23, 2025
Finished Methods Research <ul style="list-style-type: none"> - Compared CA's healthcare system and guidelines to the proposal of using DNA Methylation Patterns for Leukemia identification 	Mar 8, 2025
Trifold Planning <ul style="list-style-type: none"> • Left Panel → Background, hypothesis, DNA methylation overview 	Mar 9, 2025

<ul style="list-style-type: none"> • Center Panel → Methods, visuals, key data (big graphs, microscope images) • Right Panel → Conclusion, real-world impact, future research <p><u>Color Themes -</u></p> <ul style="list-style-type: none"> - Science (Blue & White) – Classic, clean, and professional. Blue evokes trust and intelligence, while white keeps it crisp. - Neon & Bright (Black & Neon Accents) – Dark background with neon highlights (electric blue, purple, or green) for a high-tech, cutting-edge look. - Elegant & Simple (Navy & Gold) – A scholarly, sophisticated vibe that feels prestigious. Gold headings with a navy backdrop pop beautifully. - Medical Theme (White, Red, & Gray) – Inspired by medical journals. Red for key points, gray for sleek contrast, and white for clarity. - DNA Inspired (Teal, Purple, & Silver) – Reflects epigenetics with cool, science-y hues and metallic touches to add a futuristic feel. 	
<p>Reviewed research and sources</p> <ul style="list-style-type: none"> - Made sure links worked and were proper sources under the correlating subject 	Mar 17, 2025
<p>Worked on CYSF portfolio and completed project details</p> <ul style="list-style-type: none"> - Had to cram because formatting on the CYSF website took a lot of time 	Mar 17-19, 2025
<p>Did MLA citation for all my sources</p> <ul style="list-style-type: none"> - Used <i>WorkScholar</i> to cite all my sources and links in MLA formatting 	Mar 20, 2025
<p>Presented all collected project details and materials to science fair co-ordinators and received feedback</p> <ul style="list-style-type: none"> - Explained my project and did a mock presentation - Got feedback and got marked in a similar fashion to real judging at the fair - Left feeling prepared and more confident 	
<p>Finished CYSF portfolio</p> <ul style="list-style-type: none"> - Was content and on time - Adjusted and formatted all the data - Still need to finish making the presentation 	Mar 21, 2025

video (first time)	
<p>Reviewed final materials on portfolio prior to the deadline</p> <ul style="list-style-type: none">- Made sure everything was in the right place- Ensured the green check marks- Double check for grammar and details	Mar 22, 2025