

Hana Sato
Curriculum Vitae
November 2025

EDUCATION

<u>Degree</u>	<u>Institution and Location</u>	<u>Period</u>
Biochemistry B.S., Political Science B.A.	Case Western Reserve University (CWRU) Cleveland, Ohio, United States	2023 - present
International Baccalaureate (IB)	United World College (UWC) Costa Rica Santa Ana, Costa Rica	2021 - 2023

RESEARCH EXPERIENCE

CWRU – The Role of hydrogen peroxide and L-lactate in the interaction between streptococci and *Aggregatibacter actinomycetemcomitans*

Center for Global Health and Diseases, Department of Pathology

Dr. Gina Lewin Lab - Undergraduate Researcher, January 2025 – present

Study the metabolite-mediated interactions between the *Streptococcus* genus and the oral pathogen *Aggregatibacter actinomycetemcomitans* through an *in vitro* biofilm coculture model.

CWRU – Youth in Transition: From Juvenile Courts to Adult Systems

Social Justice Institute

Dr. Jill Yang's Project - Undergraduate Researcher, October 2023 – December 2024

Statistics-based research regarding Ohio's legislation on juvenile offenders transfer policy from juvenile criminal system to adult criminal system using data from the Cuyahoga County Juvenile Court.

UWC Costa Rica – Fluorometric measurement of Chlorophyll *a* to compare evolutionary differences in plant phyla using an ANOVA test

IB Biology HL

Independent research project - Researcher, 2022 – 2023

Evaluated evolutionary differences in six different plant phyla by measuring the chlorophyll *a* concentration using fluorometric techniques. The results were analyzed using an one-way ANOVA test with Tukey HSD post-hoc analysis.

UWC Costa Rica – Comparative Study on Environmental Education in Guatemala and Japan

IB Environmental Systems and Societies SL

Independent research project - Researcher, 2022 – 2023

Examined the impact that different educational methods have on environmental awareness among students. Collected over 500 data points based on student and educator surveys in different Guatemalan and Japanese educational institutions.

ORAL AND POSTER PRESENTATIONS

Poster presentation - “The role of hydrogen peroxide and L-lactate in streptococcal fitness in coculture with *Aggregatibacter actinomycetemcomitans*”

CWRU Fall 2025 Intersections Research Symposium - Cleveland, OH, December 2, 2025

Poster presentation - “The role of hydrogen peroxide and L-lactate in streptococcal fitness in coculture with *Aggregatibacter actinomycetemcomitans*”

*Annual Biomedical Research Conference for Minority Scientists (ABRCMS) organized by the American Society for Microbiology (ASM) - San Antonio, TX, November 19-22, 2025
Junior undergraduate microbiology poster presentation award.*

Poster presentation - “The role of hydrogen peroxide and L-lactate in streptococcal fitness in coculture with *Aggregatibacter actinomycetemcomitans*”

CWRU Summer 2025 Intersections Research Symposium - Cleveland, OH, August 1, 2025

Speaker - “The role of cultural and educational differences in environmental education effectiveness in Guatemala and Japan”

Talk in Takahashi-shi Municipality - Takahashi-shi, Okayama-ken, Japan, July 15, 2022

AWARDS

ABRCMS – 3rd Year Undergraduate Microbiology Poster Presentation Award

Annual Biomedical Research Conference for Minority Scientists by ASM - San Antonio, TX, November 22, 2025

CWRU – Undergraduate Research Office Travel Funding

CWRU Fall 2025 Award - Cleveland, OH, October 2, 2025

\$650 funding to attend and present in the Annual Biomedical Research Conference for Minority Scientists (ABRCMS).

CWRU – Provost Summer Undergraduate Research Grant (PSURG)

CWRU Summer 2025 Award - Cleveland, OH, April 15, 2025

Undergraduate research stipend of \$4,500 to support summer biomedical research projects.

Davis UWC Scholars Program – 4 Year Scholarship to Attend Case Western Reserve University

\$40,000 scholarship per year for 4 years to support the education of international students in the U.S.A.

UWC Costa Rica – Outstanding Leadership Award

UWC Costa Rica - Santa Ana, Costa Rica, May 22, 2023

PROFESSIONAL AND TECHNICAL SKILLS

Language fluency:

- Native Spanish
- Native Japanese
- Fluent, native-level English

Coding and Computational Skills:

- Moderate familiarity with R and R Studio
- Moderate familiarity with MATLAB
- Proficient with Microsoft Office

Soft Skills:

- Efficiency and timeliness
- Cultural sensitivity
- Adaptability
- Eagerness to learn new skills

RESEARCH INTERESTS

Experimental and Computational Microbiology

I am interested in studying microbes, particularly bacteria and viruses involved in person-to-person infectious diseases. I am also motivated by research on how human and ecological microbial communities change over time and the effects of these shifts. Additionally, I am developing a growing interest in how microbial communities can be responsibly shaped to support sustainability and reduce environmental impact.

Epidemiology and Global Public Health

I have always been fascinated by epidemics and pandemics that unfold across multiple countries. This has driven my curiosity about the biological, environmental, and social factors that shape disease spread, as well as the strategies used to detect, prevent, and control global outbreaks.

VOLUNTEERING EXPERIENCE AND COMMUNITY INVOLVEMENT

CWRU – Social Justice Institute Undergraduate Scholars

Scholar - Cleveland, OH, August - December, 2024

I engaged in seminars and discussions examining structural inequities and community-driven solutions. I discussed with community partners ways to support initiatives promoting social justice, inclusion, and meaningful civic involvement.

CWRU – Orientation Leader for Undergraduate First Year Students

Group Leader and Facilitator - Cleveland, OH, August, 2024

Guided a group of 20+ new students through their transition from high school to college through a one-week orientation program. Through the programming, I gave workshops on sexual violence, mental health, and diversity inclusion.

UWC Costa Rica – Residence Assistant

Residence Assistant - San Jose, Costa Rica, 2022-2023

I was elected as one of the two residence assistants for the second mixed (non-binary) residence on campus.

UWC Costa Rica – Service week at Oropopo and Enraizadas

Volunteer - Costa Rica, 2022 & 2023

Volunteered twice at the Costa Rican indigenous communities Quitirrisí and Brí Brí to help renovate local public schools and to help with the maintenance of a cacao production farm, respectively.

OTHER INTERESTS AND HOBBIES

- Film camera photography
- Karate
- Reading
- Teaching Japanese and Spanish

SPECIAL ECONOMIC CIRCUMSTANCES

I come from a single mother household with limited financial resources. Being the oldest daughter I have always felt compelled to use up as little resources from my family as possible so that my younger brother can have access to them. All the education that I have been able to receive is thanks to full-ride financial assistance from academic institutions or external organizations.