Noa Oranim

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EDUCATION

Oakwood Secondary School Class of 2025 — North Hollywood, CA

- GPA: 3.97 (Unweighted), ACT Score: 35
- Advanced Coursework (OAS = AP): OAS Biology, OAS Chemistry, H Physics with Calculus, AP Calculus BC, OAS Language & Composition, OAS Statistics, OAS Number Theory, OAS Checks & Balances, OAS Spanish, OAS US History, OAS Art History, OAS Civil rights.

RESEARCH EXPERIENCE

Research Lab Team Member| 10th - 12th Grade

The Natterson-Horowitz Medical Phylogenomics & Computational Biology Lab (UCLA) — Los Angeles, CA

- Work closely under the mentorship of Dr. Barbara Natterson-Horowitz (Harvard, UCLA) with professors and graduate students to analyze complex biological data and develop computational biology models.
- Initiated, led, and presented 3 research papers; co-authored and contributed to 9.
- Attended weekly lab meetings at 6:30 am before high school. It's exciting to be taken seriously as the only teenager in a room full of graduate students.
- Invited to be part of the lab through cold emailing Dr. Barbara Natterson-Horowitz. I read her book, *Zoobiquity*, was totally blown away by it, and when I learned that Dr. Natterson-Horowitz was at the LA Zoo (near my house), I had to reach out.

SSP Genomics Track | Summer after 11th Grade

6-week Summer Science Program by Caltech and MIT at Purdue University

- Conducted research on Vibrio natriegens antibiotic resistance under the guidance of Dr. Lee Macomber, gaining practical experience in genomics.
- Selective and intensive STEM summer program with less than a 10% acceptance rate.

PUBLICATIONS, PRESENTATIONS, AND CONFERENCES

Lead Researcher & Conference Presenter |Summer after 11th Grade

"Atrial Fibrillation (AF) as an Evolutionary Byproduct: Identifying the Critical Cardiovascular Physiologies Which Shape the Phenotype of Vulnerability to AF."

2024 ISEMPH (International Society for Evolution, Medicine, and Public Health — Durham, UK

- Led and presented research on the origins of genetically heritable diseases and their overlap with biological benefits. Mentored by Dr. Barbara Natterson-Horowitz.
- Co-authored and contributed to the methodology development and data analysis of 6 other research papers presented at the conference.
- Youngest presenter at the conference.

Paid Public Speaker – "Guppies in the Boardroom"| 11th - 12th Grade

Motorola, Ernst & Young, Facebook, and others

- Developed a motivational talk based on the research I presented at the 2023 ISEMPH conference, highlighting how, across many non-human species, there is a masculinization of the female phenotype in environments with male sexual harassment. The talk draws parallels to how women operate in male-dominated work environments and emphasizes the importance of women uplifting other women not just for the sake of altruism but also for their own benefit to comfortably exist in their workspace.
- Invited to speak at over 15 groups and corporations, reaching approximately 1,000 people.
- Donated over $15,000 in speaking fees to The Pad Project, a nonprofit that addresses period poverty worldwide.

AI and Ecological Change Independent Researcher | 11th Grade
"Predicting Environmental Health through Amphibian Status Using Machine Learning"
2024 Society for the Study of Amphibians and Reptiles Conference at the University of Michigan - Ann Arbor (a graduate and professional level conference).

- Research was accepted to the U Michigan conference, but scheduling conflicts prevented me from attending.
- Built an AI algorithm to predict environmental changes based on amphibian status using machine learning.
- Self-taught Python to build the AI predictive model.

Lead Researcher & Conference Presenter | 11th Grade
"The Evolutionary Origins of Atrial FIbrillation: Leveraging Bioinformatics and Phylogenetics to Visualize Selective Pressures Underlying Vulnerability to Atrial Fibrillation"
2024 Solomon Scholar Poster Day at UCLA

- Presented a novel method to visualize evolutionary trade-offs using underlying vulnerability to the development of atrial fibrillation.

Lead Researcher & Conference Presenter | Summer after 10th Grade
"Masculinization of the Female Phenotype as a Response to Male Sexual Harassment: A Phylogenetically Widespread Effect with Implications for Human Health"
2023 ISEMPH (International Society for Evolution, Medicine, and Public Health) — Irvine, CA

- Initiated, led, and presented research on phenotypic masculinization and the influence of sexual harassment on andromorphism across species.
- Youngest presenter at the conference.

Additional Research at The Medical Phylogenomics Lab | 10th – 12th grade
Studies that I contributed to as a lab member, but did not lead:

- *"Wolff-Parkinson-White Syndrome: An Evolutionary Byproduct of Selection for Beneficial Cardiovascular Physiology."* Molly Abroms, Alin Mazmanian, Alix Masters, M.D., Kaitlyn Smolens, **Noa Oramin**, Karam Gill, M.D., Barbara Natterson-Horowitz, M.D.
- *"Postural Orthostatic Tachycardia Syndrome (POTS) as an Evolutionary Trade Off: A Novel Methodology for Identifying Selective Pressures Linked to POTS Vulnerability."* Alin Mazmanian, Kaitlyn Smolens, Molly Abroms, **Noa Oranim**, Alix Masters, M.D., Karam Gill, M.D., B. Natterson-Horowitz, M.D.
- *"Takotsubo Cardiomyopathy (TTCM) as an Evolutionary Trade Off: A Novel Methodology for Identifying Selective Pressures Linked to TTCM Vulnerability."* Alin Mazmanian, Kaitlyn Smolens, Molly Abroms, **Noa Oranim**, Alix Masters, M.D., Karam Gill, M.D., B. Natterson-Horowitz, M.D.
- *"The Evolutionary Origins of Ocular Cataracts: Leveraging bioinformatics and phylogenetics to visualize selective pressures underlying vulnerability to cataracts."* Kaitlyn Smolens, Alin Mazmanian, Alix Masters, M.D., Molly Abroms, **Noa Oranim**, Karam Gill, M.D., B. Natterson-Horowitz, M.D.
- "A Novel Method to Visualize Evolutionary Trade Offs Using Underlying Vulnerability to the Development of Cataracts" *Solomon Scholar Poster Day at UCLA.* Kaitlyn Smolens, Alin Mazmanian, Molly Abroms, **Noa Oranim**, Alix Masters, M.D., Karam Gill, M.D., B. Natterson-Horowitz, M.D.
- *"The Evolutionary Origins of Sick Sinus Syndrome: Leveraging bioinformatics and phylogenetics to visualize selective pressures underlying vulnerability to SSS."* Kaitlyn Smolens, Alin Mazmanian, Alix Masters, M.D., Molly Abroms, **Noa Oranim**, Karam Gill, M.D., B. Natterson-Horowitz, M.D.

Research Assistant & Co-Author with Dr. Rannan Meyer | 10th Grade
Levin G, Brezinov Y, Meyer R, Oranim N. "Gynecologic oncology top-cited articles: an international analysis." *Minerva Obstet Gynecol.* 2023 Nov 23. doi: 10.23736/S2724-606X.23.05391-5. Epub ahead of print. PMID: 37997321.

- Assisted in data collection and analysis.
- Discovered a passion for research and uncovering narratives within data.

Research Assistant & Co-Author with Dr. Rannan Meyer | 10th Grade
"Archives of Gynecology and Obstetrics Top-cited articles in the Gynecologic Oncology - Letter to the editor."

- Assisted in data collection and analysis.
- Developed skills in constructing research questions, which deepened my academic interests.

Oakwood School Composting Feasibility Study | 10th Grade

- Initiated and collaborated with a chemistry teacher to evaluate the feasibility of bringing a composting system to the school.
- Conducted market research and used mathematical modeling to predict economic and environmental impacts; unfortunately, concluded a lack of feasibility.

Oakwood Omicron research |9th Grade

- Chosen by the biology teacher to perform an independent research assessment of the Omicron variant of SARS-CoV-2.
- Delved into the unique pathology of Omicron and presented findings to the Oakwood community.

ADDITIONAL EXPERIENCE

International Lead Youth Speaker & Fundraiser, Oakwood School Club President | 9th - 12th Grade
The Pad Project (an international organization fighting period poverty in 12 countries)

- Joined the club in 9th grade and was promoted to Co-President in 12th grade.
- Represented the organization twice as a speaker at the UN.
- Created a motivational talk that raised over $15,000 in paid fees, leading to a promotion to the international leadership team as the only teenager.

Noa's Ark Reptile and Amphibians Rescue| 9th - 12th Grade

- Founded and managing a reptile rescue, successfully caring for and rehoming over 100 reptiles.
- Self-taught and administered basic medical treatments for various species.

Published Amateur Poet | 9th - 12th Grade

- Published multiple poems, including "No More," which received an honorable mention at the Scholastic National Writing Competition and was published in the Jewish Journal.

Unpaid Intern and Composting Researcher|10th Grade
TripleW –A tech startup that converts food waste into pure lactic acid, key to producing PLA bioplastics.

- Worked on a project involving genetically engineered bacteria to improve food waste management.
- Assisted in data collection, analysis, and data entry to support research findings.

UC San Diego — Entrepreneurship 101 | 10th Grade

- 3-credit college class, got a taste of how to take scientific ideas and make them marketable to general audiences.

SCHOOL LEADERSHIP

President - Greater Middle Eastern Affinity Group — Oakwood School | 9th - 12th Grade

- Joined in 9th grade and grew from a member to president.
- Led safe, respectful discussions during tense times, ensuring all voices were heard and finding common ground.
- Initiated and currently organizing the 2025 True Facts School Conference, scheduled for January 2025, to promote honest, fact-based discussions about the Middle East.

Co-President - DIVAS Intersectional Feminism Club — Oakwood School | 11th - 12th Grade

- A club for leaders of various women's affinity groups to share resources and support each other.

ADDITIONAL SUMMER ACTIVITIES

UChicago Exploring Frontiers | Summer after 10th Grade

- Nominated by my school and selected by the University of Chicago to attend this selective, fully-funded, one-week program for high-achieving California and Texas students.

SCUBA Diving and Fish Identification Certification | Summer after 10th Grade

- Got certified to assist in underwater research.

Neuroscience Summer Program| Summer after 9th Grade

Summer Springboard at UC Berkeley

- Took a summer class to explore my interests and discovered a passion for evolutionary and computational biology.

Marine Biology Class & Volunteering | Summer after 9th Grade

- Spent two weeks studying marine biology, deepening my fascination with the relationship between human and non-human organisms.

AWARDS & RECOGNITION

- Youngest Speaker at ISEMPH 2024 & 2023 — World's leading evolutionary biology conference.
- Nominated for President Biden's "Girls Leading Change" 2024 award by the Head of School—the only Oakwood student to receive this nomination.
- Pad Project Gala Award 2024 — Awarded for using scientific research to promote social change and being the top teen fundraiser.
- Scholastic National Writing Competition — Honorable Mention for Poetry.