Nyssa Kansal

THE HARKER SCHOOL · SAN JOSE, CA · CLASS OF 2027 · NYSSAKANSAL.COM

EDUCATION

The Harker School , *San Jose, CA · Class of 2027* 2023 – 2027

Advanced coursework: Honors Multivariable Calculus, Honors Differential Equations, Honors Linear Algebra, Honors Analytical Chemistry, AP Physics C: Mech & E&M, AP Chemistry, AP Calculus BC, AP Environmental Science, AP CS with Data Structures, Honors Biology, Honors Adv. Mandarin: Literature & Culture.

RESEARCH AND INTERNSHIPS

Independent Researcher, Microplastics Research Project , *Stanford-mentored field experiment* 11th grade – Now

I designed and ran a 27-condition experiment testing how PET microplastics affect soil health and plant growth, and whether oyster mushrooms (*Pleurotus ostreatus*) can break them down. Every week I tracked height, chlorophyll, pH, moisture and nutrients, and I used microscopy to study microbial activity and fragment shape. The results showed a measurable bioremediation effect.

Field Researcher & Training Lead , *HERI-Kenya · Diani, Kenya* Summer 2026

I trained farm managers, university students and professors at a women-led Black Soldier Fly farm in soil testing, chlorophyll measurement and microplastics microscopy. I set HERI up with a field lab, and their staff now collect data every week while I mentor them remotely. We found significant microplastic contamination and nitrogen deficiency in the farm's frass.

Research Intern , *Stanford De Leo Lab · Doerr School of Sustainability* 10th grade

I studied how macro- and microplastics affect *Bulinus* snails, which carry schistosomiasis. I cared for live specimens, measured growth in ImageJ, weighed microplastic doses on precision scales, and prepared biofilm-coated plastic in the field at Jasper Ridge Biological Preserve.

Legislative Intern (paid) , *Office of Assemblymember Patrick Ahrens* 11th grade

I wrote research briefs and policy memos on PFAS and plastic turf, then developed and presented a proposal to phase out artificial turf across California.

Summer Research Intern , *Stanford Earth Young Investigators* 9th grade

I tested nitrogen fixation through companion planting at the O'Donohue Stanford Educational Farm, then presented my findings at the American Geophysical Union annual meeting.

Compost Educator , *Hidden Villa* 11th grade

I built a community composting program at Hidden Villa: hands-on workshops, video lessons and home compost starter kits.

PUBLICATIONS AND PRESENTATIONS

Kansal, N. and Mohn Meyer, A. "Mycoremediation of PET microplastics using *Pleurotus ostreatus*: impacts on soil health and crop performance." *National High School Journal of Science*, September 2026. nhsjs.com

SETAC North America Annual Meeting (presented, Nov 2026); CANVAS (ASA · CSSA · SSSA) (accepted, 2026); AGU Fall Meeting (accepted, Dec 2026); AGU annual meeting: companion planting and nitrogen (presented, Dec 2024).

POLICY AND COMMUNITY LEADERSHIP

Speaker & Advocate , *Los Altos City Council* 11th grade

I presented my research on artificial turf at several council meetings. The council dropped the proposed park turf plans and turned to other landscaping options.

Chair , *Los Altos Hills Youth Commission* 9th grade – Now

I advise town officials on youth and sustainability issues, and I organize our annual Youth Leadership Conference, with panels and workshops on civic engagement, traffic safety and the environment.

Leadership Team; Chair, Conference Planning , *California Association of Youth Commissions* 10th grade – Now

I run our biannual statewide youth conferences and push for a youth commission in every California city. On the Legislative Subcommittee, I lobby on fire law, fentanyl, and AI in education and social media.

Farm Volunteer & Coordinator · 200+ hours , *Stanford Farm, Hidden Villa and other Bay Area farms* 9th grade – Now

I plant, weed and harvest, help farmers plan crop rotations, and help coordinate educational sessions. Along the way I've learned regenerative methods, nitrogen fixation through companion planting, and pest control.

GLOBAL AND LANGUAGE

NSLI-Y Scholar, U.S. Department of State , *Tamkang University · New Taipei City, Taiwan* Summer 2026

I spent seven weeks in Mandarin immersion on a merit-based scholarship. I placed into the highest of four class levels, earned an A, and lived with a Taiwanese host family the whole time. I was also selected as a Digital Ambassador, making blog, photo and video content for NSLI-Y's official channels.

English Teacher , *Rural youth, Shandong Province, China* 10th grade – Now

Every week I teach English over Zoom to elementary and middle school students, using my Mandarin to explain.

SCHOOL LEADERSHIP AND ACTIVITIES

Founder & President , *Harker Garden Club · Global Garden Alliance* 10th grade – Now

I started a student-run campus garden that grows produce for the school kitchens and runs experiments on composting, irrigation and crop rotation. Then I co-founded the Global Garden Alliance to help schools in the US and Brazil start their own.

Officer , *National Chinese Honor Society* 10th grade – Now

I lead Little Stars, which teaches English to students in rural China, and I ran a schoolwide fundraiser that raised $2,000+ for 200+ textbooks. I also host our Lunar New Year and Mid-Autumn Festival events.

President , *Amnesty International Club* 10th grade – Now

I lead human rights campaigns, fundraisers and letter-writing for wrongfully convicted people around the world, and I planned our Banned Books Week.

Girls Varsity Tennis , *The Harker School* 9th grade – Now

This is my fourth year on varsity. I mentor the younger players.

Lincoln-Douglas Debate , *The Harker School* 7th – 10th grade

I debated Lincoln-Douglas from 7th through 10th grade.

LAB AND TECHNICAL SKILLS

- **Specimen handling:** Live vector snails: habitat upkeep and health monitoring.
- **Imaging & measurement:** Microscope cameras and ImageJ analysis of biological samples.
- **Sterile technique:** Stanford Lab Safety certified; sterilization and pathogen handling.
- **Soil & agriculture:** pH, moisture, chlorophyll and nutrient testing; rotation and planting design.
- **Programming:** Advanced Java and Python; experimental data analysis.
- **Languages:** English (native) · Mandarin (fluent; top NSLI-Y level).

HONORS AND AWARDS

- **National Merit Semifinalist**, National Merit Scholarship Corp. (2026)
- **NSLI-Y Scholar, Mandarin (Taiwan)**, U.S. Department of State (Summer 2026)
- **Yale Young Global Scholars, Innovation in Science & Technology**, Admitted · Yale (Summer 2026)
- **Hoover History Skills Academy: US food aid under Herbert Hoover**, Admitted · Stanford (Summer 2026)
- **AP Scholar with Honor**, College Board (2025)
- **National Chinese Honor Society, inductee**, The Harker School (2025)