Kayley Winata

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WORK EXPERIENCE

Albert Fan Yee Lab | University of California, Irvine **Aug. 2023 – Present**

Chemical and Biomolecular Engineering Research Intern and Project Lead *Irvine, CA*

- Led a 2+ year research project investigating the effect of crosslinking agents on chitosan's functional groups for antimicrobial biomedical devices, synthesizing data via SEM, AFM, optical microscopy, and FTIR
- Mentored 7 researchers on lab techniques and experimental design during summer 2024 and 2026
- Presented original polymer research to 15,500+ attendees at the American Chemical Society Fall Conference and Biomedical Engineering Society Annual Conference; manuscript in preparation for publication

National Institute of Standards and Technology (US Dept. of Commerce) **Jun. 2025 – May 2026**

Materials Science and Engineering Research Intern *Gaithersburg, MD*

- First-authored a peer-reviewed paper in the American Chemical Society's Langmuir journal examining four chloride salts in polyethylenimine films for optimization of direct air capture of CO2
- Examined how film composition and humidity affected capture behavior by utilizing FTIR and QCM-D
- Communicated government-level research project through a presentation and discussion with NIST researchers

LEADERSHIP EXPERIENCE

Portola High and Jeffrey Trail Middle School Science Bowl **Aug. 2023 – Jun. 2026**

Team Captain / Head Coach and Founder *Irvine, CA*

- Captained Portola SciBowl to the best placement in school history and organized all tournament logistics and meetings
- Founded and coached Jeffrey Trail Middle School's first-ever Science Bowl team, designing the training curriculum from scratch

Portola High Science Olympiad **Aug. 2022 – Jun. 2026**

Team Captain *Irvine, CA*

- Spearheaded organizing tryouts for 100+ registrants, grading tests, communications, and tournament/meeting logistics
- Organized the Irvine Scrimmage, a city-wide scrimmage-style invitational with over 250+ participants
- Led team to a third-place regional win; highest placement since 2023

STEAM For All **Jun. 2021 – Jun. 2026**

Guest Lectures President and Student Council Member *Irvine, CA*

- 1 of 24 students selected for Student Council, overseeing 175+ volunteers and 70+ annual events with 2,500+ participants
- Led 8-person Guest Lecture board organizing career panels, growing reach to 300+ attendees globally and producing the organization's most-attended virtual event of 2024–25

HONORS & AWARDS

US National Chemistry Olympiad (USNCO) Honors **May 2025**

- Top 190 of all national qualifiers (top ~1-2% of qualifying test takers in the US & ~10% of USNCO qualifiers)
- First national qualifier in school history; Only girl in Orange County to receive honors in 2025

2024 Southern California State Science Olympiad **April 2024**

- 4th in Chemistry Lab, 5th in Forensics & 5th in Write it, Do it out of 440+ teams

EDUCATION

Yale University **Expected May 2030**

B.S. Chemical Engineering *New Haven, CT*

- **Relevant Coursework**: Organic Chemistry, Organic Chemistry Lab, Physics
- **Involvements:** World Studios, AIChE, Chemical Engineering Car, Y/Labs, Society of Women Engineers

SKILLS & INTERESTS

- **Software and Analysis:** Excel, PowerPoint, Python, R, VS Code, Java, Figma, Prompt engineering, OnShape CAD, SolidWorks
- **Laboratory Skills:** Spectrophotometry, Tensile Testing, Goniometer, FTIR, Dynamic Mechanical Analysis, Scanning Electron Microscopy (SEM), Ultramicrotome, Sputter Coating, Nanoimprint Lithography, Dropcast Lithography, Spin Coating, QCM-D, PM-IRRAS, High-Throughput FTIR ATR, Ellipsometer, Optical Microscopy
- **Communication**: Engineering Reports, Scientific Writing, Technical Presentations, Research Documentation, Experimental Design
- **Interests:** Journaling, Art Museums, Food Blogging, Film, Running, Coffee, Travel, Painting