

Eric Lee

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EDUCATION

Harvard Medical School, *Candidate for Doctor of Medicine* | 2027 - 2031

University of Pennsylvania, *Bachelor of Arts in Biochemistry and Biophysics* | GPA: 3.97/4.00 | 2022 - 2026

University of Pennsylvania, *Master of Science in Chemistry* | 2026

Program: The Roy and Diana Vagelos Program in Molecular Life Sciences (MLS)

- **Relevant Coursework:** Medicinal Chemistry, Genomics, Data Mining, Quantum Mechanics, Stochastic Processes, Electromagnetic Phenomena, Bayesian Inference, Biological Chemistry, Physical Chemistry, Computational and Theoretical Neuroscience, Advanced Cell Biology, Biophysics, Molecular Biology and Genetics, Organic Chemistry, Applied Probability Models in Marketing, Health Care Reform and the Future of the American Health System, French for the Medical Professions

Mountain Lakes High School, *Valedictorian of Class of 2022* | GPA: 4.989/4.0 | SAT: 1590/1600 | 2018 - 2022

- Class President, Editor-in-Chief of school newspaper, Environmental Club President, Theater, Varsity Cross Country

HONORS AND AWARDS

President's Engagement Prize | April 2026

- Awarded \$100,000 in project funds and \$50,000 living stipend by the University of Pennsylvania President Larry Jameson for founding of Shared Vision as a year-long community engagement project in Philadelphia

University of Pennsylvania Biochemistry Founder's Award | April 2026

- Awarded to one undergraduate in Penn Biochemistry every year for exceptional academic achievement and leadership

Phi Beta Kappa | April 2026

- Elected by University of Pennsylvania faculty and leadership to join oldest academic honors society in the United States

National Association of Asian American Professionals (NAAAP) Philadelphia Scholarship | June 2025

- Awarded \$2,000 to help cover cost of undergraduate education for demonstrated leadership and community service

Hassenfeld Foundation Social Impact Research Grant | May 2025

- Awarded \$5,000 to buy optometric equipment and implement free mobile community eye clinics in Philadelphia's health fairs and shelters and conduct research on barriers to accessing eye health facing unhoused and housed populations

Seltzer Family Digital Media Award | April 2025

- Awarded \$1,000 to purchase iPads to administer questionnaire at community eye clinics and document patient experiences

Columbia Biomedical Engineering Society Hacking Health 2025 Patient Safety Award | February 2025

- Awarded first place for presenting solution to lower re-amputation rate for podiatric amputees in 48-hour competition
- Filed provisional patent for sock with sensors placed at angiosomes to monitor ulcer formation and pressure redistribution

Roy and Diana Vagelos Science Challenge Award | June 2024

- Awarded two full academic years of Penn undergraduate tuition for high performance in science coursework and research

College Alumni Society Undergraduate Research Grant | December 2023 - April 2025

- Awarded for undergraduate research proposal: assessment of adenine base editor to mediate exon skipping at the DMD locus in specific cell types and large animal models for treatment of Duchenne muscular dystrophy (2025)
- Awarded for undergraduate research proposal: intravenous lipid nanoparticle-mediated delivery of CRISPR/Cas9 to human lymphoblasts from patient with Friedreich's ataxia and mouse model of Friedreich's ataxia (2023)

Lucid Science Challenge Chemistry Division | April 2023

- Won First Place for effective science communication and research proposal: use of adenine and cytosine base editors to target *Sap130* and *Pcdha9* point mutations in *Ohia* mouse model for hypoplastic left heart syndrome

Wharton Alliance Case Competition | April 2023

- Won Second Place for financial analysis and explanation of rationale for strategy to keep rural hospital operational
- Presenting pitch to restructure underfunded rural hospital with telehealth services, cut budgets of non-essential departments, establish partnership with nearby city hospital to arrange transportation and distribution of services

Wharton Undergraduates in Public Policy Case Competition | April 2023

- Won Second Place for creating and presenting effective policy solution for health-related problem in Philadelphia

- Identified dental services as most sought-after health need among underserved Philadelphia residents through surveys in homeless shelters. Proposed integration of oral health services in Medicare and Medicaid and devised strategy for value-based payments and community health workers to streamline delivery of oral healthcare

U.S. National Chemistry Olympiad |

April 2020 and April 2021

- Pursued independent study of chemistry and registered Mountain Lakes High School for Chemistry Olympiad, two-time national finalist in U.S. National Chemistry Olympiad as first national qualifier in Mountain Lakes High School history

Le Grand Concours (National French Contest) Level 5 |

May 2022

- Gold Medal for scoring above 95th percentile in highest level offered in Level 5 National French Contest

RESEARCH

William Peranteau Lab in Children's Hospital of Philadelphia, Undergraduate Researcher |

January 2023 - May 2026

- Created prime editing guide RNAs with silent mutations in their reverse transcriptase templates targeting the Constant Spring mutation in the HBA2 locus for treatment of alpha-thalassemia and generated disease model HUDEP cell line
- Demonstrated greater editing frequency at exon 45 splice acceptor site of dystrophin locus in fetal mice systemically injected with lipid nanoparticles containing adenine base editor mRNA and chemically modified single guide RNA compared to systemically injected adult mice as gene therapy strategy for treating Duchenne muscular dystrophy
- Demonstrated PIK3C2B knockdown by CRISPRoff epigenetic silencing in cells and nonsense-mediated decay via adenine base editing in cells and mouse tissue as two strategies for treating X-linked myotubular myopathy
- Researched lipid nanoparticle-mediated delivery of CRISPR/Cas9 to excise trinucleotide repeat from FXN gene in human lymphoblasts with Friedreich's ataxia and hematopoietic stem cells and microglia in mouse models of Friedreich's ataxia
- Develop new lab protocol for PCR-free DNA enrichment using Cas9 and base calling using long-read sequencing
- Investigate delivery of adenine base editor to mouse models of spinal muscular atrophy to substitute adenine-thymine base pair by cytosine-guanine base pair in SMN2 gene and rescue healthy phenotype

Windsor Ting Group in Icahn School of Medicine at Mount Sinai, Student Researcher |

November 2022 - October 2024

- Screened over 100 studies on remote monitoring technology in vascular diseases with medical researchers in Windsor Ting Research Group, composed manuscript section on remote blood pressure monitoring after carotid endarterectomy
- Published systematic review on remote monitoring of vascular diseases, focusing on telehealth and medical devices

Aravind Eye Care System, Research Intern |

June 2023 - August 2023

- Launched project to maximize doctor capacity, standardize rules for clinical practice and patient referrals, and streamline hospital process flows to decrease patient visit durations in retina clinic of world's largest eye care center
- Write manuscript on quality of life for childhood glaucoma patients and caregivers and how it relates to predictors of non-adherence and barriers to care in South India determined with Aravind questionnaire

LEADERSHIP AND VOLUNTEERING EXPERIENCE

Shared Vision, Cofounder |

April 2026 - Present

- Collaborate with Scheie Eye Hospital to deliver free care across Philadelphia through recurring screenings for four leading causes of blindness (glaucoma, cataract, age-related macular degeneration, diabetic retinopathy) in teleophthalmology mobile clinic with six screening modalities (autorefractometry, tonometry, pachymetry, optical coherence tomography, perimetry, fundus imaging)
- Create care coordination protocol to refer patients to Scheie Eye Hospital, help patients apply for insurance, maintain patient adherence to eye care treatment plans, provide access social services, and cover transportation costs
- Contact over 20 shelters in Philadelphia to establish longitudinal partnerships and bring eye care to unhoused populations
- Design educational flyers to raise awareness about common and rare eye diseases, interpret eye screening results with patients, and coordinate educational workshops at shelters to distribute eye care knowledge and free reading glasses
- Founded one of two annual initiatives to be awarded University of Pennsylvania President's Engagement Prize

National Research Conference at Penn (NRCP), President |

March 2024 - October 2025

- Organized Penn's first national research conference in October 2024 hosting 250 participants, four speakers including two Nobel laureates, and four graduate school panelists; hosted two poster presentations and science communication challenges
- Led 2025 team to request funding from internal Penn departments and industry sponsors, book venues and plan conference events, recruit faculty as speakers and judges, and create marketing materials to send to universities around the U.S.

- Penn Undergraduate Chemistry Society (PUCS), *President*** | January 2023 - May 2024
- Obtained American Chemical Society (ACS) certification and achieved Commendable ACS Student Communities Award
 - Organized first research conference at Penn for high school students to develop science communication skills
 - Created teaching partnerships with local high schools to demonstrate engaging chemistry experiments in the classroom
 - Led one-on-one Chemistry Olympiad tutoring initiative and chemistry lab demonstrations at local high schools
 - Hosted chemistry professionals in speaker events and created mentorship opportunities for undergraduate students
- Shelter Health Outreach Program (SHOP), *Development Chair*** | June 2024 - May 2026
- Lead volunteer undergraduates to distribute vaccines and medications, conduct free blood pressure screenings, facilitate conversations about health-seeking behaviors, and make physician referrals for Philadelphia shelter guests weekly
 - Lead project to conduct first known prospective Philadelphia vision impairment screening study and refer houseless eye care patients to community clinics, write grants to fund creation of free student-run community vision clinics
 - Organized Philadelphia-wide eye disease screening and distribution of free prescription eyeglasses alongside medical students at Perelman School of Medicine and Scheie Eye Institute and screened eighty patients with over fifty volunteers
 - Lead project to distribute naloxone to shelters and advocate for placement of naloxone in public transportation stations
 - Contact homeless shelters in Philadelphia to reach more unhoused individuals with health outreach services
- University City Hospitality Coalition (UHC), *Undergraduate Clinic Coordinator*** | February 2023 - May 2026
- Recruited undergraduates to provide multivitamins at weekly community medical clinic, write grants to fund high-demand products such as dental health kits, organize patient education materials promoting self-care and local resources
 - Organized annual Diabetes Day to conduct free diabetic retinopathy screening for Philadelphia residents in partnership with Scheie Eye Institute and Wills Eye Institute, mobilize undergraduate volunteers for advertising and screening efforts
- Center for Surgical Health (CSH), *Personal Patient Navigator*** | May 2024 - Present
- Applied for state-based Emergency Medical Assistance, provide weekly phone calls, and conduct social and emotional needs assessments for three undocumented and uninsured Spanish-speaking patients requiring surgery
 - Advocated for patient by petitioning for Penn Financial Assistance and finding free clinic opportunities in Philadelphia
- Perry World House, *Student Fellow*** | September 2024 - May 2026
- Conducted policy research and interviews on Information and Communication Technology Digital Product Passports for the International Telecommunications Union to enhance consumer and refurbisher sustainability practices, presented findings to state and industry leaders across the globe at World Summit of the Information Society
 - Wrote policy report and strategic framework for U.S. Department of State to integrate artificial intelligence in President's Emergency Plan for AIDS Relief, presented work summary to U.S. Department of Defense and Penn faculty
 - Met world leaders at Penn, U.S. Department of Defense, European Commission, NATO to discuss global policy issues
- Philadelphia Association for Community Development Corporations (PACDC), *Research Intern*** | September 2023 - Present
- Contacted health systems around the U.S. and documented case studies of health systems funding low-income housing
 - Write white paper on national health system investments in cash, land, and loans to promote low-income housing
- Wharton Department of Statistics and Data Science, *Teaching Assistant*** | September 2024 - May 2026
- Assist Professor Winston Lin in STAT 4300 (Probability) and Professor Giles Hooker in STAT 4700 (Statistical Computing) in helping students in office hours and exam review sessions, grade problem sets and troubleshoot R code
- Communication within the Curriculum (CwiC), *Speaking Coach*** | May 2024 - Present
- Develop public speaking strategies for Penn students' presentations and build classmates' science communication skills
 - Assist Professor Jeffery Saven in coaching and evaluating student presentations for BCHE 4597: Biochemistry Laboratory
- Penn Student Government, *Undergraduate Assembly and Class Board*** | September 2022 - May 2024
- Proposed and passed Undergraduate Assembly policy dedicating \$4,000 from excess budget to finance transportation for student volunteering groups during 2023-2024 academic year, managed Penn-recognized student group funding requests
 - Elected as College Chair for Class of 2026; directed over 20 class traditions, social programming events, and fundraisers
- Chinese Student's Association (CSA), *Internal Chair*** | September 2022 - December 2025
- Organized weekly events promoting community and Chinese culture at Penn, managed newsletter with 1,500 subscribers
- Wharton Undergraduate Agribusiness Club, *Consultant*** | September 2022 - January 2023
- Evaluated Penn Park Farms' net worth and devised growth strategies, contacted local farms to form two new partnerships
- Teach Seniors Technology New Jersey, *Founder and Volunteer*** | February 2019 - June 2022

- Provided weekly technology aid and created technology tutorial curriculum for senior residents at Brookside Apartments
- Kept COVID vaccination records of Brookside Apartments residents, created educational videos on cybersecurity
- Expanded volunteering services by creating local chapters in Mount Olive High School and Morris Chinese Academy

Mountain Lakes High School Student Government Association, Class President | September 2018 - June 2022

- Directed student dances, fundraiser for purchasing bottled water amid Newark lead pipe crisis, community-wide blood drive, Senior Service Project in expanding mental health resources, International Night promoting local small businesses
- Fundraised \$4500 to purchase 2500 N-95 masks for local healthcare workers amid COVID-19 pandemic

PRESENTATIONS

American Society of Gene and Cell Therapy | May 2025 - May 2026

- Abstract presentation (will be published in *Blood* in December 2026): J Bauer, M Carpenter, S Wang, E Lee, P Zoltick, M Alameh, W Peranteau. "Gene editing corrects the most common non-deletional mutation in alpha thalassemia: HBA2 Constant Spring." American Society of Gene and Cell Therapy 29th Annual Meeting. Boston, MA, May 2026.
- Abstract presentation: J Sincavage, E Lee, S Wang, R Choi, M Leschly, M Carpenter, H Saidi, M Alameh, W Peranteau. "A Prenatal Gene Editing Strategy for Congenital Musculoskeletal Disease with Systemically Delivered Lipid Nanoparticles." American Society of Gene and Cell Therapy 28th Annual Meeting. New Orleans, LA, May 2025.

National Research Conference at Brown | April 2025

- Selected to give oral presentation on using base editing and epigenetic modulation to treat rare congenital myopathies

Yale Undergraduate Research Conference | April 2025

- Honorable mention for poster and flash talk on adenine base editors and CRISPRoff as strategy for editing disease genes

University of Pennsylvania Center for Undergraduate Research and Fellowships Research Expo | September 2024

- Presented poster on knocking down PIK3C2B gene with adenine base editor-mediated disruption of splice donor site and CRISPRoff-mediated methylation of promoter as proof of concept for X-linked myotubular myopathy gene therapy

Stanford Undergraduate Research Association | April 2024

- Selected as one out of eighty undergraduates in the U.S., presented poster on lipid-nanoparticle mediated delivery of CRISPR/Cas9 to excise trinucleotide repeat in FXN gene to treat Friedreich's ataxia

University of Pennsylvania Life Science Management Poster Session | September 2023

- Presented poster on delivering risdiplam, nusinersen, or adenine base editor as strategies to treat spinal muscular atrophy

Aravind Eye Hospital Final Presentation | August 2023

- Presented findings on bottlenecks in Aravind Eye Hospital Free and Paying Retina Departments, such as erroneous referrals and re-investigations, and solutions, such as electronic medical record rule engines and standardized operating protocols for free and paying hospital referrals, to Aravind Eye Hospital Chief Medical Officer and retina physicians

PUBLICATIONS

1. Bai, Halbert, Adriana Pero, Pavel Kibrik, Annie Chang, Eric Lee, and Windsor Ting. "A Systematic Review of Telehealth and Remote Monitoring in Vascular Surgery." *JVS-Vascular Insights* 2 (September 2024): 100133. <https://doi.org/10.1016/j.jvsvi.2024.100133>.

ADDITIONAL SKILLS

Laboratory Techniques: cell culture, next-generation sequencing, mouse necropsy, flow cytometry

Skills and Languages: Java (proficient), Python (proficient), French (conversational), Chinese (native fluency in Mandarin)

Interests: Teaching, Violin, Running, Entrepreneurship, Gardening, Theater