



EDUCATION

California Institute of Technology (Pasadena, CA)

June 2025

- Candidate for a Doctor of Philosophy (PhD) in Medical Engineering
- GPA: N/A (Weighted on a 4.0 Scale); *National Science Foundation Research Fellow*

Massachusetts Institute of Technology (Cambridge, MA)

June 2020

- Bachelor of Science in Chemistry-Biology and Physics; Minor in Nuclear Engineering and Computer Science
- *Certificate in Living Machines; Undergraduate Teaching Award in Mathematics; Department of Chemistry Research Award*
- GPA: 4.9 (Weighted on a 5.0 Scale); *Phi Beta Kappa Scholar*

RESEARCH EXPERIENCE

NASA Jet Propulsion Laboratory: Summer Research Assistant (Pasadena, CA)

May 2020 – Present

- Studying the spread and contamination routes of bacteria (*Bacillus*, *Klebsiella*) onboard the ISS for planetary protection.
- Examining genetic adaptations in *Klebsiella pneumoniae* during spaceflight using a whole genome sequence analysis.
- Accepted to present my work at the American Society for Gravitational and Space Research's conference in November 2020.

Hen Lab: MIT Undergraduate Researcher (Cambridge, MA)

February 2019 – May 2020

- Simulated C++ quasielastic scattering events to probe for signatures of a previously unobserved 30 MeV force-carrying boson.
- Optimized a photomultiplier tube to record the energy deposited in a scintillator bar when hit by a laser or neutron.
- Awarded \$500 to present at the American Physical Society's Department of Nuclear Physics' CEU conference in October 2019.

NASA Ames Research Center: Summer Research Assistant (Mountain View, CA)

June 2019 – August 2019

- Chemically modified gold nanoparticles to kill off bacteria when hit by cosmic radiation to sterilize water in cislunar space.
- Accepted to present my work at the International Conference on Environmental Systems in Lisbon, Portugal in July 2020.

New Engineering Education Transformation: MIT Undergraduate Researcher (Cambridge, MA)

September 2017 – May 2019

- Manufactured a quad-cultured gut on a chip to simulate the human intestine and replace unreliable/unethical animal models.
- Evaluated villi-like structure formation + MUC2 expression. Quantified diffusion of lucifer yellow through membrane channels.

Oak Ridge National Laboratory: Nuclear Engineering Science Laboratory Synthesis (Oak Ridge, TN)

June 2018 – August 2018

- Isolated and scaled up a deuterated CS11 protein for biofuel synthesis and determined its structure via neutron scattering.
- Performed cavity diagnostics on a linear particle accelerator in semi-real time for neutron scattering structure determination

National Institutes of Health: Summer Research Assistant (Bethesda, MD)

May – August (2016, 2017)

- Awarded an honorable mention at the National Center for Advancing Translational Sciences' conference (presented 2 posters)
- Published in the Biotechnology Journal for developing a novel high throughput acetylcholinesterase inhibitor detection assay.
 - o Xia, Menghang *et al.* (2017). *Biotechnol. J.*, 12: 1600715; PubMed ID: 28294544 1.

LEADERSHIP AND CLUBS

Leadership Positions:

- Multivariable Calculus, Introductory Biology, and Organic Chemistry teaching assistant.
- Secretary, then Treasurer, of MIT's Marine Robotics Team.
- High school teacher in Rozzano, Italy (Special Relativity and Wave Dynamics)

September 2017 – May 2020

May 2017 – May 2020

January 2020

Entrepreneurial Ventures:

- Founder of Turtle Pond – Caltech Course Selector website (<https://turtle-pond.com/>)
- Co-Founder of Vibrant Life – connecting the special needs community in the 21st century
 - o MIT 100K Pitch Finalist (November 2019); Awarded \$5,000 from MIT Sandbox
- Founder of the online tutoring center *Mind Network* (<https://mindnetwork.us/>)
 - o Awarded \$1000 in MIT Sandbox + \$1000 as 1st place finisher in BetterMIT hackathon
- Co-Founder of *Augmedic* for the International start-up competition Incube (2nd place finisher)

August 2020 – Present

September 2019 – Present

December 2018 – Present

September 2018 – October 2019

Athletic Achievements:

- 10-time NEWMAC / 1-time COOP Diver of the Week; 2-time NEWMAC Diver of the Year
- 6 National Honorable Mention, 3 CSCAA Scholar, All-American titles; Google Cloud Academic All-District Men's At-Large Team

September 2016 – May 2019

SKILLS

Software Laboratory

Python, C++, Matlab, SolidWorks, Fusion360, Pymol, HTML, CSS, Javascript, PHP, and basic Java/Android Studio
Cell Culture, Absorption/UV-Vis Spectroscopy, NMR, Column Chromatography, Pangenome, and SNV/SNP