

EDUCATION

Harvard Medical School

M.D.

Harvard/MIT MD-PhD Program

Boston, MA

2024 – 2032 (expected)

Massachusetts Institute of Technology

B.S. Physics and Computer Science & Engineering

GPA: 5.00/5.00, Phi Beta Kappa, minor in Biology

Cambridge, MA

2020 – 2024

RESEARCH

Harvard Department of Chemistry and Chemical Biology

Research Assistant

- PI: Xiaowei Zhuang
- Research topic:
 - * 3D-genome imaging of the brain

2024 – present

Broad Institute of MIT and Harvard

Undergraduate Researcher

- PI: Manolis Kellis (Computational Biology Group)
- Research topics:
 - * Genetic basis of Alzheimer's disease heterogeneity
 - * Methods for enhancing polygenic score prediction

2022 – 2024

MIT Research Laboratory of Electronics

Undergraduate Researcher

- PIs: Marin Soljačić (Photonics and Modern Electro-Magnetics Group), Steven Johnson (Nanostructures and Computation Group)
- Research topics:
 - * X-ray imaging and detection with nanophotonic scintillators
 - * Computational imaging with compressed sensing and end-to-end inverse design

2020 – 2022

PUBLICATIONS

2. Arya G, **Li WF**, Roques-Carmes C, Soljačić M, Johnson SG, Lin Z. End-to-end optimization of metasurfaces for imaging with compressed sensing. *ACS Photonics*. 2024;11(5):2077–2087. doi:10.1021/acsp Photonics.4c00259.
1. **Li WF**, Arya G, Roques-Carmes C, Lin Z, Johnson SG, Soljačić M. Transcending shift-invariance in the paraxial regime via end-to-end inverse design of freeform nanophotonics. *Optics Express*. 2023;31(15):24260–24272. doi:10.1364/OE.492553. Editors' Pick.

PATENTS

1. Roques-Carmes C, Rivera N, Lin Z, **Li WF**, Soljačić M, inventors; Massachusetts Institute of Technology, assignee. Nanophotonic Scintillators for High-Energy Particles Detection, Imaging, and Spectroscopy. U.S. Provisional Application 63/257,611. October 2021.

PRESENTATIONS

3. **Li WF**, Roques-Carmes C, Lin Z, Johnson SG, Soljačić M. X-ray spectroscopy with end-to-end optimized nanophotonic scintillators. Extended abstract presented at: Conference of Lasers and Electro-Optics; May 10, 2023; San Jose, CA
2. **Li WF**, Tanigawa Y, Kellis M. Polygenic dissection of phenotypic heterogeneity in Alzheimer's disease. Poster presented at: Broad Institute Scientific Retreat; December 13, 2022; Boston, MA.
1. **Li WF**, Arya G, Roques-Carmes C, Lin Z, Johnson SG, Soljačić M. Angular and Spectral Sparse Sensing With End-to-End Optimized Nanophotonics. Extended abstract presented at: Conference of Lasers and Electro-Optics; May 18, 2022; San Jose, CA.

AWARDS

- Phi Beta Kappa 2024
- Sigma Pi Sigma 2024
- Gates Cambridge Scholarship Finalist 2024
- Optics Express Editors' Pick 2023
- MIT SuperUROP Outstanding Research Award 2023
- Eric and Wendy Schmidt Center funded Research and Innovation Scholar 2022 – 2023
- USA Astronomy and Astrophysics Team 2020
- 2-time USA Mathematical Olympiad (USAMO) Qualifier 2019, 2020
- U.S. Physics Team 2019
- Sunshine State Scholar 2019

SERVICE AND TEACHING

- Junior Reviewer for *Nature Communications*
- MIT Department of Physics: Scribe, Tutor, Freshman Pre-Orientation Program research presenter
- Volunteer in patient transport and emergency department at Massachusetts General Hospital
- UPchieve Tutor
- MIT Students for Open and Universal Learning
- Combinatorics Teaching Assistant at AwesomeMath Summer Program

LEADERSHIP AND ACTIVITIES

- Undergraduate: Genomics Journal Club (founder, president), MIT Premedical Society (collegiate relations co-chair)
- High School: Florida Student Association of Mathematics (state co-president), Mu Alpha Theta (president), Science National Honor Society (president), Orchestra (all-county principal cello), Swim (varsity team)