

Justin Shan

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EDUCATION

Acton-Boxborough Regional High School

High School Student

Acton, MA

Sep. 2017 – Jun. 2021

Harvard Extension School

Undergraduate Credit: Math E-21a (Fall 2020) & Math E-21b (Spring 2021)

Boston, MA

Sep. 2020 – Jun. 2021

ACHIEVEMENTS

Honorable Mention, Top 50 Semifinalist USA Biology Olympiad

2019, 2020

AIME Qualifier (Highest Score: 8)

2017 – 2020

National Science Olympiad Medalist

2018, 2019

NAC Qualifier

2021

Scholastic Writing Awards: Personal Memoir - Silver Key

2021

WORK / SUMMER EXPERIENCES

Program in Mathematics for Young Scientists (PROMYS)

Boston University

Jun. 2019 – Aug. 2020

Boston, MA

- Attended selective six-week number theory summer program for high school students hosted by Professor Glenn Stevens
- Researched special linear groups of matrices under mentorship of University of Washington mathematics professor Jayadev Athreya
- Took undergraduate-level seminars on number theory and Hilbert's Tenth Problem

Computational Neuroscience Research Intern

Broad Institute of MIT and Harvard

Dec. 2019 – Present

Boston, MA

- Under the mentorship of Dr. Fu Zhanyan, have been studying the underlying physiological mechanisms of autism-spectrum disorders with a specific focus on mGluR3 receptors in the thalamic reticular nucleus (TRN)
- Designed a neuronal .abf data analysis tool for to generate key evidence figures for burst-firing properties of target TRN neurons ([Abstract](#))

Endocrinology Research Intern

Massachusetts General Hospital

Oct. 2019 – Mar. 2020

Boston, MA

- Under the mentorship of Dr. Tatsuya Kobayashi, studied microRNA function within Sox9(+) osteochondroprogenitor cells seeking possible cell-based gene therapies for skeletal diseases

AFFILIATED ORGANIZATIONS

Acton-Boxborough Science Olympiad | Captain est. 2019

Sep. 2017 – Present

- Led team to win MIT, Harvard, Yale and Brown Invitational Competitions; 1st at States since 2010; 9th at Nationals (2018, 2019)
- Began mentoring program that individually connected underclassmen to veteran team members.
- Medals:
 - * *MIT 2020*: 3rd Designer Genes, 6th Botany
 - * *Nationals 2019*: 1st Fermi Questions, 3rd Astronomy
 - * *Massachusetts State 2019*: 1st Fermi Questions, Protein Modeling, Astronomy
 - * *MIT 2019*: 1st Fermi Questions, 4th Designer Genes
 - * *Nationals 2018*: 1st Fermi Questions

Everaise Academy | Co-founder, Head of Biology, Board Member

May 2020 – Aug. 2020

- Helped co-found nationwide summer STEM program targeted towards middle/high-school students teaching under a model emphasizing discovery that received over 700 applicants this past summer
- Designed all aspects of biology course including curriculum writing, team recruitment, sponsorship acquisition and guest lecture invitations

Acton-Boxborough Math Competition | Vice President, Head of Grading, Tutor

Sep. 2017 – Present

- Co-lead student-founded, student-run math contest with 500+ participants last year; contributed problems to both annual and monthly online contests
- Served as a tutor during Spring 2020, helping raise over \$1500 for local hospital