

Paarth Jamdagneya

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Education

ALLEN HIGH SCHOOL

HIGH SCHOOL

📅 August 2019 - May 2021

- Ranked 22 / 1836 students
- Achieved Underclassmen Distinction

TEXAS ACADEMY MATH & SCIENCE (TAMS)

HIGH SCHOOL

📅 August 2021 - Current

- Undergraduate Research Fellowship
- Qualified for Google Code Jam
- Expected Graduation with Distinguished Diploma

Links

🔗 GitHub **pa-arth**

🔗 Personal Site **paarthmj.com**

Coursework

Organic Chemistry I
Human Anatomy and Physiology I
Biomedical Engineering I
Multivariable Calculus
Physics - Mechanics
Computer Science II
Biomedical Problems
Dystopian Literature
US History
Spanish III
AP Biology

Skills

LANGUAGES

Python • C/C++ • HTML/CSS •
JavaScript • Spanish • Hindi / Urdu

OTHER

Figma • Blender • SolidWorks •
Microsoft Office • iMovie • Git • AHA
CPR/AED Certified • Cell Culture

Test Scores

PSAT

COMPOSITE - 1500 (740, 760)

SAT

COMPOSITE - 1560 (770, 790)

ACT

COMPOSITE - 36 (36, 36)

Honors/Awards

INTERNATIONAL CAREER DEVELOPMENT CONFERENCE (ICDC) FINALIST

DISTRIBUTIVE EDUCATION CLUBS OF AMERICA

📅 April 2022

📍 Baltimore, MD

- Used KPIs, Maslow's Hierarchy of Needs, competitive analysis tools, etc. to pitch a Business to Business marketing presentation

NATIONAL MERIT SCHOLAR SEMIFINALIST

NATIONAL MERIT SCHOLAR CORPORATION

📅 October 2022

- Achieved a qualifying index of 224, ranking me in the top 1% of all test takers. Applied for Finalist Selection which will be announced in February 2023.

1ST PLACE HACKUNT

UNIVERSITY OF NORTH TEXAS HACKATHON

📅 April 2022

📍 Denton, TX

- Through the SONR challenge, designed a P2P communication application that used blockchain technologies like Cosmos and Handshake to securely transfer files end-to-end across nodes.

33RD PLACE WORLD SCHOOLS NATIONALS

NATIONAL SPEECH AND DEBATE ASSOCIATION

📅 June 2021

- Proposition / Opposition First Speaker specializing in foreign relations, trade, and global hegemony.

STATE HISTORY DAY

NATIONAL HISTORY DAY

📅 April 2022

📍 Austin, TX

- Created a documentary detailing the Cherokee Trail of Tears which focused on debate, democracy, and its impact on the history of the United States

3RD PLACE INTEGRATION BEE

UNIVERSITY OF NORTH TEXAS

📅 April 2022

📍 Denton, TX

- Used methods of integration to solve problems in an "bee" style format.

Research

NECROTIC CORE MINIMIZATION IN SPHEROIDS

DR. MOO-YEAL LEE UNT BIOPRINTING LAB

📅 August 2021 - Current

A project under the University of North Texas to develop a method of culturing 3D cell models (spheroids) which more closely resembles the human anatomy and physiology. Different pillar/perfusion plate tilting angles were optimized for the minimization of 3D spheroid cores. Matlab Simulink, SolidWorks, and Blender were used for flow modeling and data analysis (Publication manuscript complete, review is currently ongoing).

TIN (II) ARGININE CRYSTAL MODELING

DR. SHENGQIAN MA GROUP UNT

📅 May 2022 - Current

A project for Colgate-Palmolive to develop Fluoride crystals with antibacterial properties. A heavy emphasis was placed on oxidation resistance to therefore increase the toothpaste shelf life. Powder X-ray Diffraction techniques were utilized to validate Tin-Arginine crystal structure.

Activities

EMERGENCY MEDICAL TECHNICIAN TRAINING AND CERTIFICATION

EMERG AND CELINA FIRE DEPARTMENT

📅 15 hrs/wk - 20 wks (11-12)

- Trained over 180 conceptual and 60 in-ambulance hrs
- Treated patients with RSV, Sepsis, Seizures, Blunt Head Trauma, and Severe Dehydration
- Connected with patients in their native languages
- Earned American Heart Association CPR certification

UNDERGRADUATE RESEARCH PROJECT LEAD

UNIVERSITY OF NORTH TEXAS (UNT) 3D DYNAMIC CELL CULTURE BIOPRINTING LAB - NECROTIC CORE MINIMIZATION

📅 10 hrs/wk - 40 wks (11-12)

- Grew, passaged, and differentiated Liver Organoids
- Simulated fluid dynamics in pillar/perfusion plate system to minimize spheroid core cell death
- Wrote a review paper on the use of Lung Organoids for disease modeling
- Created a Blender-based animation which encapsulated the process through which the necrotic core minimization occurs
- Both research manuscripts are complete with publication pending

WORLD SCHOOLS HEAD, 1ST SPEAKER, MOCK TRIAL HEAD

NSDA WORLD SCHOOLS DEBATE, TEXAS MOCK TRIAL

📅 6 hrs/wk - 30 wks (9-12)

- Placed 33rd at the NSDA Nationals Tournament
- Won best speaker of the tournament at Langham Creek Invitational
- Held practices, mock debates, organized group motions
- Mentored local middle school debate team
- Co-founded Mock Trial club and prepared a team for Texas Mock Trial State competition

VARSITY CROSS COUNTRY / TRACK CAPTAIN AND COACH

ALLEN HIGH SCHOOL (GRADES 9,10) / TAMS (GRADES 11,12)

📅 15 hrs/wk - 32 wks (9-12)

- Created various workouts for different stages of the race (i.e. hill workout, sprints, long distance)
- Hold and organize practices
- Register school for meets, manage logistics, transportation, etc.
- Recruited 20 team members
- 5K PR 18:12

INVENTOR

US PATENT & TRADEMARK OFFICE

📅 3 hrs/wk - 30 wks (12)

- Created a patent-pending toilet-based urine analysis device
- Low-cost diagnostic tool for rural areas, save thousands of dollars in medical fees by providing early detection of infection
- Underwent patent-process training and independently filed provisional patent

HEAD TEACHER AND FOUNDER

ALLEN KIDS HELPING KIDS NON-PROFIT

📅 4 hrs/wk - 35 wks (10)

- Tutored over 100 students struggling in online environment during the pandemic
- Created an activity-based science curriculum which more closely resembled an in-classroom experience
- Created and managed website using React.js

TAE KWON DO INSTRUCTOR / DEMO TEAM MEMBER

WHITE TIGER TAE KWON DO

📅 12 hrs/wk - 40 wks (9-10)

- Achieved 3rd Degree black belt

- Performed at cultural demonstrations to introduce others to the Tae Kwon Do and Korean culture
- Took teaching classes and volunteered as an instructor and taught White - Deputy Belt Classes
- Competed at Texas International Friendship Games in both Sparring and Form

PRODUCT DEVELOPMENT LEADER AND CLUB FOUNDER

TAMS INNOVATION SOCIETY

📅 3 hrs/wk - 30 wks (11-12)

- Plan, organize, and hold club meetings
- Oversee each club committee and act as president of the board
- Host ideathons, patent-process meetings, and facilitate brainstorming sessions

TROOP 1299 LIFE SCOUT

SCOUTS BSA

📅 3 hrs/wk - 48 wks (9-12)

- Elected as Assistant Senior Patrol Leader and was assigned to manage all of the patrol leaders
- Elected as Patrol Leader, led cooking, tenting, and troop activities on campouts for the patrol
- Learned the fundamentals of servant leadership as an active member of Patrol Leader Council

UNDERGRADUATE PROJECT LEAD

MA GROUP / COLGATE-PALMOLIVE - TIN (II) ARGININE CRYSTALLOGRAPHY

📅 40 hrs/wk - 10 wks (12)

- Introduced antibacterial properties to fluoride crystals for use in toothpaste
- Decreased oxidation of fluoride crystals to increase the toothpaste shelf-life
- Researched optimal crystal growing conditions by manipulating pH, reactant concentration, solvent, etc.

BUILD / OUTREACH TEAM LEAD

FIRST TECH CHALLENGE / FIRST ROBOTICS COMPETITION

📅 6 hrs /wk - 24 wks (9,11)

- Managed modeling, construction, outreach, and marketing portions of the team
- Mentored local middle school students on robotics and promoted STEM programs at various fairs
- Created CAD model of pulley/claw system on SolidWorks and designed Java code for autonomous portion of robot game
- Helped negotiate InfoVision team sponsorship
- Qualified for regional competition

TABLA (INDIAN CLASSICAL DRUM)

CHINMAYA MISSION / RKT

📅 3 hrs/wk - 48 wks (9-12)

- Achieved Visharad Pratham International Certification
- Performed frequently at the local temple and played for cultural dance (Kathak) classes
- Proficient in Tintal, Rupak Tal, Jhaptal, Kaharawa Tal, and Dadra

ACT SCIENCE TUTOR

TAMS TUTORS TEENS

📅 2 hrs/wk - 20 wks (11-12)

- Create worksheets and practice problems for the ACT Science section

SCRATCH INSTRUCTOR

MOVE THE WHEEL FOUNDATION

📅 3 hrs/wk - 24 wks (9)

- Developed a curriculum and taught weekly classes on Skype to children living in underprivileged areas in rural India
- Brainstormed solutions to help local farmers find markets directly rather than going through a middle-man

COMMITTEE LEADER

NJHS

📅 1 hrs/wk - 10 wks (9)

- Manage service project committee, attend board meetings, organize service projects.

BOARD MEMBER AND SERVICE PROJECT COMMITTEE MEMBER

KEY CLUB

 2 hrs/wk - 20 wks (10)

- Create service project opportunities in an online environment
- Recruit club members to participate in service projects
- Attend board meetings and communicate monthly service ideas

ONLINE SHADOWING

HEAL CLINICAL SHADOWING

 1 hrs/wk - 25 wks (11)

- Listen to doctors' experiences in their respective fields through online zoom meetings
- Examine real-life scenarios and learn about the process doctors use to diagnose disease
- Learn about unique experiences and aspects of patient care

DENTON ASPIRE VOLUNTEER

TAMS RESEARCH ORGANIZATION

 2 hrs/wk - 28 wks (11)

- Promote STEM in local middle schools
- Aid middle schoolers in creating science fair projects for presentation at FWRSEF

COMPETITIONS CO-PRESIDENT

TAMS ACADEMIC SOCIETY

 3 hrs/wk - 20 wks (12)

- Present competition opportunities, namely Olympiads, for students to participate in (USABO, USNCO, USMDO, USACO)
- Prepare study materials, study sessions, hold office hours, create mock examinations
- Manage logistics and register students for competitions