ANWESHA GHOSH

Apply the life sciences to engineer future alternative energy sources

EDUCATION

August 2020 - Present

Dublin High School, CA

Engineering Academy
Varsity Student-Athlete and Athletic Scholar

Weighted 10-12 A-G GPA: 4.45
SAT Score: 1450

AP Physics C Mechanics, AP Calculus BC, AP Biology, AP Calculus AB, AP Physics 1, AP Computer Science Applications, AP Computer Science Principles, AP Environmental Science, AP Seminar, AP English Language & Composition, Honors Digital Electronics, Honors Principles of Engineering

RELEVANT SKILLS

Growing algae

Python Certification

Arduino / C++

HTML & CSS

Linux / Bash CMD

Wireshark analyst

Electric circuit theory

Soldering, Crimping, Hardware

Printed Circuit Board designing

RESEARCH

July 2022–March 2023

Arduino-Controlled Photobioreactor Algal Microbial Fuel Cell with Conveyor Belt Cathode for Boosted Biofilm Growth and Heavy Metal Removal - *Stockholm Junior Water Prize, U.S. Navy & Marine Corps Award, Alameda Water Districts Water/Wastewater research award, 1st Place Alameda County Science Fair, Steve Menkus Environmental Leadership Award, 1st Place California Science and Engineering Fair, Amgen BioGENEius Challenge Finalist, International Science and Engineering Fair Finalist, ISEF 4th Place Energy & Sustainable Design*

- Learning: 135mV of voltage generated and 85% heavy metal removed by the Chlorella Vulgaris algal-boosted microbial fuel cell with a modified IoT photobioreactor styled cathode; Modified cathode with conveyor belt as electrode to boost biofilm growth to increase voltage and bioremediation to remove nickel, cadmium and copper

September 2020–February 2021

Arduino System for monitoring voltage and water quality of a Dual-Chambered Microbial Fuel Cell - *Project Planet Special Award, 1st Place Alameda County Science Fair, Honorary Mention California Science Fair*

- Learning: Arduino system measured peak 85 mVs generated by the microbial fuel cell, verified by a multimeter; The arduino monitored MFC through pH and turbidity; dual chamber model with PVC salt bridge successfully created a polarity generated by the bacterial respiration

PROFESSIONAL EXPERIENCE

Amplo Global Inc., New Jersey - Management Analyst Summer Intern *June–August 2020*

- Provided relief in Sunderban after Cyclone Amphan by building model community at the Hingalganj block with first-aid training, school wide meal systems, gardening/farming in the hypersaline environments (rice grains that can be grown the saltwater flooded rice paddies), digging wells to access freshwater and temporary tents for students/families

Eta Carinae Nonprofit, Dublin - Founder *June 2020–Present*

- Bringing creativity through STEM to Title 1 schools with workshops teaching skills such as how to use power tools, hydraulics and woodwork
- Partnered with Antioch schools to donate books and clothes as well as helped teach basic online cybersecurity to Dublin Senior Center

Trivalley CoderDojo, Livermore - Leadership Council & Python Mentor *August 2016-May2022*

- Maintained club from leadership position of 150 people learning different aspects of online skills on a weekly basis across different Bay Area venues
- Created curriculum to teach 30 students Python over a school year and cybersecurity CTF teams

AWARDS and EXTRACURRICULARS

- 8 years of Destination Imagination (global STEM competition) where I used Arduino to build a drone, human sized bird wings, automated blooming flowers and motion censored curtains -- 4th/70 Place Globals, 4x Global Finalist, 3x Da Vinci Award for creatively bringing awareness to gun violence in story-telling format
- 3 years of Science Olympiad -- Secretary and placed at States with three events: Codebusters 5th/40 & 4th at MIT Invitational, Water Quality 6th/40, Green Generation 12th/40
- 3 Years of Varsity Track as 400M Sprinter; Junior Olympics 4x4 Qualifier