Curriculum Vitae

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OBJECTIVE

Seeking a research position in Bioengineering or Microbiology. Looking to contribute in either a dry or wet-lab environment and to pick up new skills by working closely with a professional in the field.

EDUCATION AND WORKSHOPS

Prospect Ridge Academy HS (2014-Present)

GPA: 4.766

Completed STEM Courses:

- AP Calculus BC
- AP Biology
- AP Computer Science
- AP Chemistry
- AP Physics C

4 Years of English

4 Years of Social Studies

3 Years of French

Workshops at Denver Biolabs

Covered basic biochemistry, the central dogma, and gene structure

Designed basic generic circuits using BioBricks

Practised sterile lab techniques and basic lab procedures

Deep dive into CRISPR and its applications

Speaker on clinical microbiology and microbe culturing

HONOURS AND AWARDS

National Honor Society (2017)

Prospect Ridge Academy High Honor Roll (2015-2017)

Design award and Finalist Alliance at FTC State Championship (2017 & 2018)

Won 2nd in Junior Energy and Transportation at CSEF (2014)

Won 1st in Alternative Fuels at Denver Metro Science Fair (2014)

EXPERIENCE AND WORK

Avidity LLC (2016-2017)

Designed unique DNA tether and bridge sequences for use in biosensors

Directed evolution panning for peptides binding to a DNA-PNA hybrid target

Extensive work with sterile technique, solution calculations, and *E. Coli* culturing

Performed *E. Coli* transformation via electroporation and antibiotic based selection

Expressed in *P. Pastoris* and subsequently purified a mutant Gaussia Luciferase protein

Assessed Gaussia Luciferase activity using a Luminometer

Running protein gels to assess the purity of a protein sample

Designed a lateral flow assay on an aluminium surface and chemically altered the hydrophilicity of the surfaces in order to achieve the desired flow rate and fluid flattening / spread across the detection zone of the device.

SKILLS

Biology:

- Biotech lab procedures (PCR, Electrophoresis, Restriction Enzyme Digests, etc.)
- Chemical calculations and reagent preparation
- Bacterial plasmid design
- DNA primer / tether design
- Sterile Technique
- In *vivo* expression of foreign proteins
- Bacterial and Yeast transformation

Computing:

- Extensive experience with Linux and Windows operating systems
- Fluent in LATEX, R, Haskell, Rust, Elixir, LISP, Java, HTML, CSS, and JavaScript
- Full Stack Web, Data Processing, and Machine Learning experience

- Worked with digital biotechnology tools such as Benchling, SnapGene, Thermo Fisher Multiple Primer Analyzer, and IDT OligoAnalyzer
- Extensive experience with VCS and contributing to open source

Writing / Language:

- Experience with reading scientific papers
- Essay and report writing experience
- Basic French language skills (listening, speaking, reading, and writing)
- Public speaking and presentation experience

PROJECTS, PRESENTATIONS, AND PAPERS

Honours Physics "Build a Planet" Project

Link - http://bit.ly/2IA9f5F

FTC_HTTP: An Application for Easily Programming FTC Robots

Link - http://bit.ly/ftc_http

Link - http://bit.ly/ftc_http_video

The Regicide of the Fisher King

Link - http://bit.ly/2FHoYSy

Pokéstats — What Type Of Pokemon Is The Match For You?

Link - http://bit.ly/2FVjMqh

The Effect of Varying Lamp Emission Spectra on the Rate of Photosynthesis

Link - http://bit.ly/2HCx2QU

How I Learned to Stop Worrying and Embrace the Absurd

Link - http://bit.ly/2Gwqkg2

EXTRACURRICULARS AND SERVICE

Founding member of the Prospect Ridge Academy Robotics Club

Parted-out and built around ten computers for personal use or for family and friends

Designed and maintained a web application for managing student activities and clubs at Prospect Ridge Academy

Reverse-engineered a web-based programming interface and developed a tool for wirelessly updating robot code for the FTC competition

During my final year of robotics I created and taught a curriculum on robot programming that was designed to prepare the underclassmen to lead in the seniors' absences