



RapidX Bio - Technology And Entrepreneurship For The Future of Healthcare

Overview

We are building the future of healthcare, with an optical plasmonic PCR (polymerase chain reaction) device that can help detect microbial diseases in minutes.

Project Description - www.rapidx.bio

The Problem

- **1.4+ BILLION** people are diagnosed with microbial diseases every year.
- **8 DAYS** is the average delay for a person to go from the first symptom to treatment.
- This delay leads to severe disease, causing **15 million+ avoidable** deaths every year.
- Current diagnostics companies are making lab-facing technologies. This does not remove the bottleneck – access to healthcare professionals.

The Solution We Have Built

- RapidX Bio can detect infectious diseases in minutes and is patient-facing, using plasmonic PCR technology
- More accurate than a doctor, a bacterial culture, and existing gold standard PCR machines.
- The novel optical PCR technology we are building is 20x faster than current state-of-the art



The Ask / The Projects

The aim of our project is to refine our generic prototype device (which is currently able to perform 30-cycles PCR tests in under 10 minutes) and develop assays for a variety of diseases,

such as Urinary Tract Infections, Sexually Transmitted diseases, cancer, and even farm animal diseases such as bovine mastitis.

What you will work on

We'll make sure that everything you work on is highly impactful, and that roles are well balanced for intellectual stimulation and rare necessary evil moments of admin.

- **(Biomedical)** PCR assay development - experiment and develop new rapid diagnostic assays for a wide range of diseases. You will learn to operate plasmonic PCR machines developed by the team at RapidX Bio and engage with experimental planning, data collection and analysis and most importantly enjoy the process of inventing life-saving tools that are 20x better than what's out there today.

We'd be willing to accept up to 2 Bio Summer interns with a commitment of 40 hours per week for 8 weeks. We will be covering reasonable living expenses in Cambridge as part of this internship.

Who we are looking for

As a small team of engineers and scientists, we are looking for partners in crime who complement our existing team culture and want to use their brains to save lives at scale. Most of our team members are outliers, so we'd love for you to show us what separates you from the average person in your class.

Biomedical:

We are looking for those with **wet lab** experience from a background in **biomedical science/biochemistry/chemistry/medicine**. Bonus points if you can showcase strong analytical skills, experience with writing/reading research papers and previous experience in industry or research placements.

Most importantly, personality and personal values. We're looking for those that we'd enjoy working with in the long term, mostly likely beyond the summer project...

Supervisor Profile

Name: Dr. Shuler Xu

Current Position: Co-Founder and CTO of RapidX Bio, Researcher (University of Cambridge)

Linkedin: <https://uk.linkedin.com/in/shuler-xu-md-994011142>

The internship will be held at Cambridge University's Cavendish Laboratory and Maxwell Centre, home to 30 Nobel laureates and currently recognised as one of the leading laboratories in the world for optoelectronics and new technologies.



Reading Material

<https://doi.org/10.1038/s41565-022-01175-4>

<https://pubs.rsc.org/en/content/articlelanding/2021/AN/D0AN02496A>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1120384/>

<https://www.ncbi.nlm.nih.gov/books/NBK447315/>