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Summary

Commented [GJ1]: When tailoring weave in company mission statement.

- **MSci Molecular Biology** (3 year BSc + 1 year research MSc placement), University of Manchester.
- **Use of Front-End Development** languages such as **HTML, CSS and JavaScript** to improve operational efficiency.
- Experience in performing **high throughput RT-qPCR** diagnostics using **liquid handling robotics,** development of qPCR SYBR assays and **Next Generation Sequencing** of SARS-CoV-2 samples.
- Experience working in a **containment level 2 (CL2) laboratory** and quality management systems such as **writing, interrogating and resolving incident reports.**

Qualifications and Training

2022

- Working towards FreeCodeCamp.org 's certification in: Reactive Web Development (**HTML, CSS**), **JavaScript** Algorithms and Datastructures, Front End Development Libraries (**React**), Data Visualisation etc.

2016-2020

- **MSci Molecular Biology research placement** investigating the phenotype of CRISPR-induced *fkbp4*- deficiencies in embryonic zebrafish. (DNA extraction and PCR, qPCR, use of bioinformatics to design CRISPR gRNA and ssODNs)

- Bsc Molecular Biology, University of Manchester
  - 3rd year undergraduate modules. **Overall 1st/ 73.5%-** Relevant units include: **Bioinformatics, Computational Biology,** Molecular Biology of Cancer**,** Gene Regulation and Disease, Human genetics and Evolution, MSci Project proposal.
  - 2nd year undergraduate modules. **Overall 1st/ 84.5%**
  - 1st year undergraduate modules. **Overall 1st/ 87%**

2015-2016

- **GCE A LEVEL**
  - A-levels: Biology (A*), Chemistry (A), Mathematics (A), AQA Extended Project (A*)
  - AS: Biology (A), Chemistry (A), Geology (A), Mathematics (A)

Career History

2020-2022 Biomedical scientist with Amazon Diagnostics

CL2 lab responsible for **high throughput SARS-CoV-2 RT-qPCR diagnostics.**

- **Process design and implementation**

- **Designed Hamilton Script** to aliquot fluid with greater efficiency and consistency than manual process.
- Worked with engineering department to **integrate the process into the Laboratory Information Management** (LIM) System.
- Designed and **carried out engineering validations** to troubleshoot the new scripts; identifying and fixing errors and improving the user experience.
- **Trained junior staff** in the use of this new process workflow and tracked their competency.
- **Coded web forms to instruct the user** on how to make up the batches of fluid and **generate weekly consumption reports** for supply departments.

- Identification of SARS-CoV-2 variants using Oxford Nanopore **Next Generation Sequencing** technology.
  - In the absence of an in-house LIM system to track samples, designed scripts in **Python3 to process bulk spreadsheet data** for upload into Benchling system.
  - Organised and tracked sample storage using self-made SQL database system.
- Developed SYBR qPCR assays for Sexually Transmitted Infections (STIs).
  - **Academic literature searches** to identify candidate primers for multiplex qPCR assays and **use of online tools to validate primers**.
- Engaged with Quality Management and Risk team.
  - To **write controlled documents** such as Standard Operating Procedures (SOPs) to define lab processes.
  - Identified and mitigated risks by **writing** Non-Conformity **Incident Reports** and **developing and implementing process changes**.
- Developed clinical diagnostics skills.
  - Use of **liquid handling robotics** to oversee sample transfer and extraction.
  - Preparation of extraction controls, reagents and PCR master mix plates.
  - Setting of PCR thresholds and **analysis of PCR** CT values.
  - **Validation studies** to improve the clinical diagnostic process such as using dilution series to investigate the effect of temperature and media on CT value.
- Chaired interdepartmental meetings.
  - Chaired meetings between the shifts of the clinical team and other teams such as supply, quality and engineering to resolve disputes and inform the team of process changes.
  - Contribute to the site's sustainability committee discussing and implementing novel ideas to improve environmental sustainability.

2019-2020

- **MSci research masters programme** using CRISPR-Cas9 to generate and phenotype Zebrafish *fkbp4* and *eif5a* mutants.
  - Used **DNA extraction/ PCR and RNA extraction/ RT-PCR** to genotype zebrafish.
  - Used **bioinformatics resources** (CRISPRScan, ChopChop and CRISPOR) in addition to own knowledge **to design CRISPR-Cas9 gRNAs and ssODNs** for Zebrafish *eif5a* Thr49Asn knock in.
  - Planned experiments to microinject Zebrafish eggs with CRISPR-Cas9 solutions and carry out subsequent phenotyping experiments within a specific time frame.