

**Bio-process Engineer**

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**EXPERIENCE****Dartmouth College – Postdoctoral Research Associate/Staff Scientist, 2020-Present**

- Assay development on MSD and Luminex systems utilized to detect anti-drug antibodies in clinical trial samples

**AstraZeneca – PhD Researcher, 2015 - 2020**

- Collaborative project with Imperial College London. All research was conducted at AstraZeneca's facilities in Cambridge, UK.
- Research focused on increasing glycosylation and productivity by investigating genetic, metabolic, glycomic and physiological changes in CHO cells
- Objectives were met by utilizing techniques such as flow cytometry, RNA-seq, metabolic modeling, and chemical analytics
- Creation, development, and implementation of key research objectives delivered within set time scales.
- Identified genetic targets to increase antibody productivity and complex glycosylation, key quality attributes.
- Research findings currently under preparation for submission to *Biotechnology and Bioengineering*.

**Research Assistant - Imperial College London, June 2015 - August 2015**

- Assisted in the creation of an artificial Golgi body
- Expression, purification, and activity analysis of non-native glycosyltransferases in *E. coli* and yeast.

**TECHNICAL SKILLS**

- Molecular cloning: primer design, plasmid construction, DNA scale-up, transfection & transformation
- Protein extraction & purification, Western Blots, titer quantification, ELISA, BLI, ECL, SDS-PAGE
- Culture, handling and genetic engineering of mammalian, bacterial, fungal cells
- Expert in glycosylation and mammalian metabolic networks
- Experienced with micro- (15mL) and small-scale (5L) stirred tank bioreactors
- Design and optimization of cell culture processes in CHO cells
- Assay development for measuring immune responses to biologic treatment
- DNA & RNA extraction, cDNA synthesis, PCR, RT-PC
- HPLC, GC-, LC- & Triple-quadrupole-MS
- RNA sequencing & bioinformatics
- Flow cytometry
- Enzyme activity assays
- Optimization of difficult to express proteins in *E. coli*
- Design, production and troubleshooting of a novel "pH-sensor" for use in the intra-Golgi space
- Using and programming automated bioreactor (ambr15) and liquid handling systems
- Statistical analysis & scientific writing
- Writing and editing of standard operating procedures for use in clinical laboratory

**EDUCATION****PhD - Chemical Engineering**

AstraZeneca &amp; Imperial College London, 2015 - 2020

**Master of Science by Research – Biological Sciences**

University of Bristol, 2013 - 2015

**Bachelor of Science - Molecular Biology**

Cardiff University, 2010 – 2013

**PUBLISHED WORK**

Kotidis, Demis, Goey, Correa, **McIntosh**, Trepekli, Shah, Klymenko & Kontoravdi (2019). Constrained global sensitivity analysis for bioprocess design space identification. *Computers & Chemical Engineering*. 125, pp 558-568