

# Case Study

## TRANSFORMING 16S SEQUENCING

### Assisting the academic community to find the right industrial partner

Dr Winnard joined Next Generation Sequencing (NGS) company, YouSeq on a NBIC funded internship from in the summer of 2019, where he was tasked with taking a new prototype for a next generation sequencing (NGS) kit, for identifying bacteria in a mixed population, through to commercial product launch.

The kit is based on a method known as 16S sequencing, which reads a region of the bacterial genome known as the 16 rRNA and then identifies which bacteria are present based on genomic information. 16S sequencing already exists, however the workflows are cumbersome and require long, highly skilled hours on the bench-side. YouSeq's new prototype transforms that complex workflow in to a very simple closed-tube system that any technician can perform with ease.

Performing detailed studies on sensitivity and specificity, Dr Winnard identified final issues and implemented improvements to make the new kit robust for commercial use and produced good quality data to satisfy the company's quality standards, resulting in a successful product launch. He was also involved in the beta version of launch, with trials of the kit occurring in the US, South Africa, Portugal and the UK, where he took part in commercial and technical discussions with the company's first significant customer. During the product launch Dr Winnard also supported the marketing function, which included developing website, the instructions-for-use and creatively contributed to printed content.



*Dr Chris Winnard and YouSeq CEO Dr Jim Wicks presenting at NBIC'S Networking Event in January 2020 at the University of Southampton.*

### What's next?

After completing his project with YouSeq in early January, Dr Winnard successfully found employment with Novogene, a global NGS service provider.

Dr Winnard said, "The internship was amazing and provided me the opportunity to not only gain valuable industry experience but also help me develop my skills and knowledge of DNA sequencing."

YouSeq are currently undertaking a marketing drive for the product with great hopes for significant commercial success that will bring further income and employment to the local community.

Dr Jim Wicks, YouSeq CEO said, "We believe that the product Dr Winnard has worked on will be a powerful research tool for the biofilm research community globally."



### Dr Chris Winnard

Dr Chris Winnard has a PhD in Clinical and Environmental Microbiology and a MBioSci (1st Class Honours) in Biomedical Sciences. His research interests revolve around DNA sequencing with a particular focus on the interplay between the microbiome and human health and disease. He is currently working as a Molecular Biology Scientist for a multinational sequencing service company specialising in RNA sequencing and library preparation.