

STFC Cancer Diagnostic Network + Virtual Challenge Workshop – Early Diagnosis

Tuesday 17th November 2020

Industrial Bio



Company Representative: Marcus Ambler

Overview: Borwell Ltd, Rosalind Franklin Institute and 3DMagination set out to see if machine learning techniques could be used to infer nanoscopic properties of a system from microscopic images. This capability can improve cryo-electron microscopy (cryo-EM), a powerful microscopy technique to capture images of biological samples that have been frozen in a near-natural states.

There were 2 separate sections to the project, the first was to capture the nanoscopic properties in some manner, as a ground truth for the machine learning technique, and the second was to find an appropriate machine learning method to see if these parameters could be trained from the microscopic image. The first part of the project was completed by 3DMagination, and the second part by Borwell. Project management and domain expertise was undertaken by the Rosalind Franklin Institute.

With the advent of new projects, they feel that improvements may make it possible to accurately train a system to infer nanoscopic properties of systems, from optical images which could be used as part of the quality control cycle.

More info: <https://borwell.com/>



Company Representative: Adam Byrant

Overview: CanSense is developing an accurate, fast, non-invasive diagnostic for the early detection of Cancer using Spectroscopy and AI technology on a simple blood sample. This will enable GPs to make quick and informed decisions for their patients, reducing patient anxiety hence speeding up the diagnosis and treatment process for those at greatest risk. Significantly increasing patient outcomes all in an efficient, cost effective manner.

The innovative CanSense test provides an affordable healthcare solution to early stage cancer detection using one simple blood test, significantly reducing the high levels of cancer mortality. Our diagnostic is initially focused on Bowel Cancer which is the second most common cancer globally. It is a simple blood test, which can significantly reduce the number of patients subjected to unnecessary colonoscopies, hence speeding up the diagnosis and treatment process for those at greatest risk, reducing the healthcare burden. At CanSense we believe in the early detection of cancer when it can be easily treated with the best possible patient outcomes.

More info: <https://cansenseltd.com/>



Company Representative: Alexander Cherlin

Overview: Kromek's vision is to help saving lives by battling cancer and other serious illnesses. Kromek, with its CZT detector technology, is at the frontier of Molecular Imaging to provide state-of-the-art tools for early diagnostics, treatment planning, drug development, and much more.

More

info:

<https://www.kromek.com/medical/medical-products/>



Company Representative: Elizabeth Blake

Overview: Micrima's aim is to develop a system that can reduce the women dying of Breast Cancer. We believe the answer is early detection. We need a system that is comfortable for women, can be used frequently from a young age. Micrima is working to this aim.

More info: <http://www.micrima.com>



Company Representative: James Ingham

Overview: SciaScan is developing a novel bench-top instrument designed to significantly improve the early diagnosis of cancer. The instrument will exploit screening protocols derived from characteristic infrared absorption biomarkers that are determined by the application of an algorithm developed in-house. The instrument is designed to be used on tissues in a pathology laboratory and will facilitate the design of a probe for in situ surveillance during surgery.

More info: <https://www.liverpool.ac.uk/~sdb/SciaScan/>

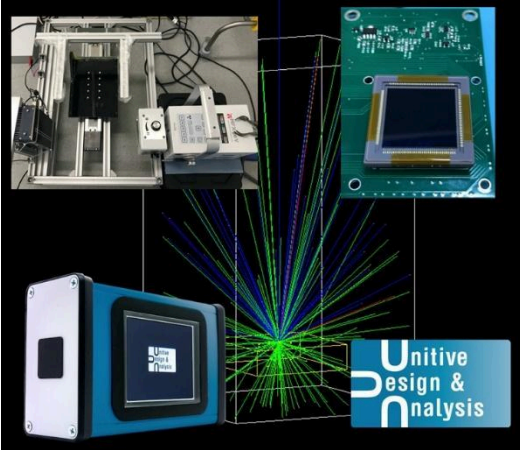
streambio



Company Representative: Andrew Chaloner

Overview: Stream Bio has a novel stable fluorescent label, Conjugated Polymer Nanoparticles (CPNs), developed at Kings College London. CPNs have an unparalleled extreme brightness, sensitivity and stability and are being developed as a molecular probe in two areas with regards bowel cancer diagnosis; a rapid diagnostic (10min) aimed at early stage screening to replace the fecal immunochemical test (FIT) currently distributed through the post, and for post-operative monitoring. The other, as a potential probe for in-situ diagnostic imaging of bowel cancer tumors and then surgical removal, as opposed to biopsy, histology and then additional clinical procedures. The probe is being developed using a bowel cancer biomarker affimer (CEA) from Leeds University and is currently funded by the BBSRC. Outputs of the project will feed directly into a point-of-care diagnostic device with lab-based sensitivity which is under development and planned for early 2021, as well providing data for future clinical development of the in-vivo diagnostic probe.

More info: <http://www.streambio.co.uk>



Company Representative: Philip Marsden

Overview: Unitive provides feasibility testing and initial design services to the MedTech market. They specialise in X-ray simulation, system design and qualification, specifically around noise and dose reduction. The team are specialists in integrating imagers for regulatory compliance

More info: <https://www.unitivedesign.co.uk/>