



Trinity Translational Medicine Institute Trinity Centre for Health Sciences

Genomics of Human Disease

Representative Case Study — Genomics core facilities – TrinSeq.

Dr. Elaine Kenny

Funded through the 2008 SFI-Research Infrastructure Call, TrinSeq was Ireland's first next-generation genome sequencing (NGS) facility set up by Dr Elaine Kenny and Dr Derek Morris. What started out as a core equipment purchase to aid in the research activities of the Neuropsychiatric Genetics Research group lead by Professor Michael Gill has developed into a core facility and is supported with a highly skilled team that provides numerous resources for its many users throughout Ireland. The facility currently houses an Illumina MiSeq platform and is self-sustaining with a proven track-record in research and partnership with Science Foundation Ireland (SFI) funded researchers, the wider all-Ireland research community and industry. The facility supports diverse projects from determining organisms that define soil composition (metagenomics) or cause disease (e.g. food-borne pathogens); to identifying ancient human DNA; to finding genetic mutations in living people that contribute to conditions as disparate as autism, arthritis and cancer. The facility and its core staff lead by Dr Elaine Kenny have been co-authors or acknowledged on numerous publications in many diverse areas reflecting the diversity of the projects it supports.

In 2010 TrinSeq founded the Irish Next Generation Sequencing Meeting to provide education and foster cross institutional, industrial and international collaboration with delegates spread across Ireland. This 1 day meeting has earned a great reputation as being a valuable source of education, information and networking to the wider NGS community. The 2016 meeting attracted > 200 delegates from academic, clinical and industry backgrounds.

More recently, Professor Aiden Corvin and Dr Elaine Kenny were successful in their bid for strategic funding to purchase a much higher throughput sequencing technology with SFI for the facility. This new equipment will help to broaden the type and scale of projects that can be facilitated through the facility and in particular allow development and further engagement with industry and clinical partners that have a need for higher throughput sequencing combined with a highly skilled local support team. TrinSeq has also been a partner to Enterprise Ireland to provide high skilled sequencing projects and data analysis to SME business' under their Innovation voucher scheme highlighting the translational aspect of the work carried out and possible through the core facility.



13 years

Time taken to complete The Human Genome Project.



10 days

Time taken for TrinSeq to generate the same amount of data in 2014.



276

Number of human genome equivalents sequenced by TrinSeq in 2014. TrinSeq has sequenced the equivalent of a human Genome a day.



Collaborator/Funding Agencies

