

NEXT GEN DIAGNOSTICS ANNOUNCES THAT PROFESSOR JULIAN PARKHILL, PATHOGEN GENOMICS GROUP LEADER AT THE SANGER INSTITUTE, HAS JOINED ITS SCIENTIFIC ADVISORY BOARD

CAMBRIDGE UK and MOUNTAIN VIEW, CALIFORNIA, August 19, 2017 – Next Gen Diagnostics is pleased to announce that Professor Julian Parkhill, one of the world’s foremost experts on pathogen whole genome sequencing and its application, has joined its Scientific Advisory Board as Chief Advisor, Bioinformatics Pipeline Development. Dr. Parkhill, a Fellow of the Royal Society with over 500 peer-reviewed publications and recipient of numerous honors, is a widely recognized expert in pathogen sequencing, having been on the Sanger Institute team that sequenced Mycobacterium Tuberculosis in 1997, one of the first bacterial whole genome sequences ever produced. Since then, in roles that have included both Director of Sequencing as well as Chief of Pathogen Genomics at the Sanger Institute, Dr. Parkhill has overseen or participated in the direction and analysis of the largest volume of pathogen sequencing in the field. His immense publication record includes landmark studies on the use of WGS for transmission detection and outbreak definition (Harris et al 2010), as well as studies defining the current methods to determine antibiotic susceptibility from sequence (Holden et al 2013).

“Julian’s decision to join Next Gen Diagnostics put us on the map, ensuring that the systems we develop to utilize pathogen WGS in the clinic are world-class in their sophistication, relevance and execution. We have the privilege of bringing high volume, automated, low cost WGS to the clinic, which he and colleagues have long predicted would define the future of clinical microbiology and infection control. His contribution has and will ensure that at every turn our system development is guided by the world’s foremost base of experience and expert judgement,” said Paul A. Rhodes, Ph.D., Next Gen’s CEO.

“It has been a distinct pleasure to work with the team at Next Gen to help shape their now world-leading automation of pathogen bioinformatics,” said Professor Parkhill. “Based upon the pipeline we have developed and refined at the Sanger Institute over a 20 year period, they have taken the streamlined automation of all the individual subsystems to a never-before-achieved level, and in the process enable high volume low cost sequencing and analysis. The impacts include the real-time detection of transmission and prevention of outbreak in hospitals that from our research we know is enabled by WGS. I look forward to very actively contributing to the continued development of their systems for the automatic prediction of antibiotic resistance profile, and in time other characteristics of infection such as its virulence and transmissibility, helping to guide care and reduce the spread of infection.”

About the Next Gen Diagnostics WGS System

Next Gen Diagnostics has developed and deployed a fully automated pathogen bioinformatics analysis pipeline, based on the bioinformatics pipeline and expertise of the Sanger Institute. An interactive information system, the NGD Dashboard, is furnished, each morning highlighting the new transmission chains detected (if any) the night before along with new cases added to

already-identified outbreak. Tools enable and support the action of infection control teams and other stakeholders in validating and intervening to stop outbreak. In addition, the NGD Dashboard includes modules that predict antibiogram, compare that prediction with phenotype, and enumerate the sample's full resistome profile including all genes and mutations known to be associated with resistance. Quality control is embedded throughout the system. Information visibility can be tiered by user ID, so infection control teams are presented with interpreted and actionable results (patient status within each transmission chain) while senior leadership can have access to layers of visualization suitable for expert review.

About Next Gen Diagnostics

Headquartered in Mountain View California and with a team based at the world-renowned Sanger Institute outside Cambridge, UK, Next Gen Diagnostics (NGD) has developed the world's most complete automation of pathogen WGS bioinformatics and has combined that with a highly automated robotic sample preparation and sequencing service to offer hospitals a unique turn-key capability: on site, 24 hour WGS results to enable transmission detection and outbreak prevention. Now deployed, validated and in clinical use, this system has already proven to detect transmission, and, in partnership with hospital infection control teams to prevent outbreaks.

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