LESSONS FROM THE BENCH: MOVING NGS FROM RESEARCH TO APPLICATION BY IMPLEMENTING LOGICAL QA/QC MEASURES

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In the past few years, next generation sequencing (NGS) has repeatedly demonstrated its potential for forensic investigation. The amount of data generated is phenomenal and the technology could have profound effects on the law enforcement community. However, there are now several commercial vendors entering the forensics market – each with a different method of sequence generation, and each with its own unique challenges. Until now, the majority of the discussion of NGS implementation has focused on assessing the quality of the data and proper methods for analyzing that data. Stemming from major issues encountered during research and development efforts, serious considerations regarding the quality control of the sample processing methods need to be addressed. In order to be consistently reliable like the fragment analysis and Sanger sequencing procedures now in use, methods of quality control and trustworthy standards that would be applicable across NGS platforms need to be put in place before these technologies are transitioned into an application setting. This presentation will detail the problems and pitfalls associated with high sample number processing using Roche 454 GS Junior protocols and the QA/QC measures that were implemented. Additionally, this presentation will serve to open discussions on how to implement community wide processing standards in order to make NGS technology a valuable forensic tool. ⌘