

Abstract:

This grant application requests funds to upgrade the existing Next Generation Sequencing instrument located in the Nebraska Research Initiative supported UNMC DNA Sequencing Core Facility from an Illumina Genome Analyzer Iix to an Illumina HiSeq 2000. Upgrading to the HiSeq 2000 will allow researchers to perform experiments at a dramatically lower cost, as well as complete experiments not realistically performed on a GAIix. The projects described in this proposal are wide-ranging and include antibiotic resistant staphylococcal research, birth defects, breast cancer, leukemia, lymphoma, pancreatic and prostate cancer, chronic obstructive pulmonary disease, disorders of language and learning, HIV disease, methamphetamine abuse, neuroscience, and obesity. The researchers participating in this proposal are associated with multiple departments from both UNL and UNMC and are affiliated with the Center for the Molecular Biology of Neurosensory Systems (COBRE-UNMC), The Center for Neurovirology and Neurodegenerative Diseases, The Center for Lymphoma and Leukemia Research, The Center for Staphylococcal Research (CSR), The Eppley Cancer Institute, The Munroe-Meyer Institute, and The Nebraska Center for Virology (COBRE-UNL). Access to cutting edge technology is critical to the success of our Nebraska biomedical researchers and the HiSeq 2000 upgrade will enable our researchers to compete more effectively for additional funds to conduct research. Next generation sequencing technology is revolutionizing biomedical research and the data obtained by the research outlined in this proposal will be used to generate novel biomarkers, diagnostics, and help to bring the mission of personalized medicine to a reality.