The Blackfynn Platform for Rapid, Multi-Modal Data Integration, Analysis, and Collaboration to Enable New Approaches to Drug Addiction Research

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Drug abuse remains a critical public health concern, with total estimated costs exceeding $700 billion annually in the U.S. alone. Drug addiction is a complex mental health disorder that requires expertise in a variety of methodologies to effectively examine the disease process and identify novel biomarkers or targets for drug development. Despite the expansive and diverse datasets generated through broad, multi-disciplinary research approaches, there have been no effective biomarkers identified for drug addiction. However, recent work has revealed a growing body of evidence demonstrating that genetic and epigenetic processes play a critical role in the behavior and neurobiology underlying drug abuse. The emergence of epigenetics as a critical new area of investigation adds to the need for sophisticated methods and tools for multi-modal data integration and analysis to enable scientists and clinicians to explore and analyze scientific and clinical data in context.

In collaboration with NIH NIDA, Blackfynn has developed a HIPAA-compliant cloud-based data management, visualization, and analysis platform for the Neurosciences to accelerate research and foster collaborative efforts. The platform enables researchers to explore relationships between multi-modal datasets that are typically difficult to extract and removes friction in the scientific process, allowing individual investigators and teams to maximally leverage their data. The ability to integrate and analyze genomics data, behavioral data, and imaging data in a single data platform — to identify biomarkers of disease and response to therapy — will significantly improve the ability of the research community to gain insight in the mechanisms of drug addiction.