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BioNano Genomics Announces Research Collaboration With UCLA

SAN DIEGO, Oct. 8, 2015 (GLOBE NEWSWIRE) -- BioNano Genomics, the leader in physical genome mapping, today announced that the Company has entered into a research collaboration agreement with the University of California, Los Angeles (UCLA). The research is intended to study the role of structural variations in human genetic pediatric disorders using BioNano Genomics' revolutionary genome mapping platform, the Irys® System. Principal investigator of this collaboration will be Dr. Eric Vilain, M.D., Ph.D., of the David Geffen School of Medicine at UCLA.

Previously, Dr. Vilain led a study that investigated 814 cases with presumed genetic disorders that have remained undiagnosed despite exhaustive testing efforts. This study mainly focused on sequencing the protein coding regions of a patient's genome to uncover any genetic influences on disease. The results obtained from the study indicated that only 26% of the patient population showed molecular diagnosis. Technologies including next-generation sequencing (NGS) were unsuccessful in identifying the cause of genetic disorders in the remaining 74% of the study patient population.

This research collaboration will focus on studying the role of structural variations in the undiagnosed patient population using next-generation mapping (NGM) capabilities of the Irys System. Dr. Vilain and his team will utilize two Irys Systems to conduct research on samples obtained from approximately 80 undiagnosed patients, with a predominantly pediatric population.

Erik Holmlin, Ph.D., President and Chief Executive Officer of BioNano Genomics, commented, "We are thrilled to collaborate with such a world-renowned institution to further demonstrate the importance of genome mapping in understanding the role of structural variations in causing genetic disorders. Next-generation mapping continues to become an important tool that provides comprehensive analysis and decisive insights about complex genomic architecture. We look forward to working with Dr. Vilain and his team as we advance the research on the role of structural variations in genetic diseases."

Dr. Eric Vilain, M.D., Ph.D., Co-Director of the UCLA Clinical Genomics Center, said, "We know that single nucleotide variants in the coding regions of genes only explain a minority of our patients. The BioNano Genomics' Irys System finally allows us to study the large parts of the genome that standard NGS can't access. Our goal is to achieve a molecular diagnosis for all of our patients, and we look forward to discovering how the Irys System can contribute to that."

Irys' next-generation mapping can provide valuable insights about the biology of the genome based on information on the order, orientation, arrangement and interaction of genomic components. It provides a comprehensive view of the whole genome via single molecule imaging, facilitating high resolution *de novo* mapping without the guidance of a reference genome.

About BioNano Genomics

BioNano Genomics, Inc., the leader in next-generation mapping (NGM), provides customers with

genome analysis tools that advance human, plant, and animal genomics and accelerate the development of clinical diagnostics. The Company's Irys® System uses NanoChannel arrays integrated within the IrysChip® to image genomes at the single-molecule level with average single-molecule lengths of about 350,000 base pairs, which leads the industry. The long-range genomic information obtained with the Irys System helps decipher large, complex DNA repeats, which are the primary cause of inaccurate and incomplete genome assembly.

On its own, next-generation mapping with the Irys System enables detection of structural variants, many of which have been shown to be associated with human disease as well as complex traits in plants and animals. As a companion to next-generation sequencing, next-generation mapping with the Irys System integrates with sequence assemblies to create contiguous hybrid scaffolds that reveal the highly-informative native structure of the chromosome.

Only BioNano Genomics provides long-range genomic information with the cost-efficiency and throughput to keep up with advances in next-generation sequencing.

The Irys System has been adopted by a growing number of leading institutions around the world, including: National Cancer Institute (NCI), National Institutes of Health (NIH), Wellcome Trust Sanger Institute, Broad Institute of MIT and Harvard, BGI, Garvan Institute, Salk Institute, and McDonnell Genome Institute of Washington University. Investors in the Company include Battelle Ventures, Domain Associates, Legend Capital, Novartis Venture Fund, Federated Kaufmann, Monashee Investment Management, and Gund Investment Corporation.

For more information, please visit us at www.BioNanoGenomics.com.

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