Bionano Genomics Hosts Day 3 of 2022 Symposium with New Research Demonstrating Applications of OGM in Solid Tumor Analysis

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SAN DIEGO, Jan. 12, 2022 (GLOBE NEWSWIRE) -- Bionano Genomics, Inc. (BNGO), pioneer of optical genome mapping (OGM) solutions on the Saphyr® system and provider of N_XClinical™, the leading software solutions for visualization, interpretation and reporting of genomic data, hosted the third day of 2022 Symposium, the Company's premiere event showcasing OGM research applications across key clinical areas of constitutional genetic disease, hematologic malignancies, solid tumors and OGM combined with next-generation sequencing (NGS).

Seven presentations from leading researchers across North America and Europe showcased the utility of OGM for analysis of solid tumors at 2022 Symposium. Seven presentations from experts across North America and Europe shared how OGM can characterize genetic aberrations in a wide variety of cancers, such as pediatric brain tumors, pulmonary mesothelioma and many others. Their findings consistently demonstrated high concordance of OGM results for structural variants (SVs) identified by traditional cytogenetic and molecular methods. These researchers also shared novel applications of OGM that generated insights may guide clinical oncology care.

Evidence has demonstrated that OGM workflows can be scalable and can address an unmet need by providing increased resolution and shorter turnaround times over traditional techniques in the evaluation of solid tumors. Dr. Ravindra Kolhe, from the Medical College of Georgia at Augusta University, showed data from an ongoing study to characterize 100 solid tumors, where OGM using Saphyr® demonstrated clinical utility for chromosomal analyses, over karyotyping, fluorescence in situ hybridization, and microarray. Based on these findings, Dr. Kolhe and his team are working on a CLIA validation study for OGM and its subsequent incorporation into their clinical laboratory workflow.

Two independent studies showed that pediatric brain tumors can be rapidly characterized by OGM. Dr. Elena Garcia Sanchez, researcher at the Hospital Infantil Universitario Niño Jesús in Madrid, Spain presented a case study about a 13-year-old with a mediastinal mass that could not be diagnosed using routine tests. Running pleural effusion samples using OGM on Bionano's Saphyr ® platform, the team was able to diagnose alveolar rhabdomyosarcoma and initiate therapy. On clinical improvement, the mass was biopsied, and histopathology confirmed the diagnosis that was made earlier using OGM. OGM showed concordance with traditional testing and was shown to be a potential important tool for detecting solid tumors that are inaccessible by routine biopsies. While most cancers are clinically challenging, brain tumors represent a particularly intractable group, and within pediatric brain tumors, SVs play an important role. Dr. Miriam Bornhorst, from Children's National Hospital, initiated a project to determine a more reliable approach for detection of SVs in pediatric brain tumor samples. Dr. Bornhorst's project demonstrated that OGM can be an effective method for the identification of clinically relevant SVs, some of which are not detected with other clinical testing methods. Further clinical studies are ongoing to determine the effect of SVs on responses to treatment and prognosis in pediatric brain tumors.

OGM can also provide insight into the genetic variations in a wide range of solid tumor types, including pulmonary mesothelioma and undifferentiated small round cell sarcomas. Mesothelioma is a slow growing cancer of the pulmonary mesothelium that is caused by asbestos or other particulate fibers. It is a challenging cancer to work with and to obtain DNA from owing to the fibrotic nature of the tumor. Dr. Matthew Couger, lead investigator at Brigham and Women's Hospital, has been testing Bionano's OGM workflow for genomic characterization of mesothelioma samples. Using OGM, Dr. Couger and his team were able to obtain high-fidelity data to decipher the complex chromosomal landscape. Similarly, Dr. Juan Diaz-Martin, PhD, from the Department of Pathology-HUVR and Instituto de Biomedicina de Sevilla presented his findings on undifferentiated small round cell sarcomas (USRCS), a highly aggressive cancer. This data demonstrated comprehensive characterization of genomic aberrations using OGM that could have a significant impact on clinical outcomes.

New applications of OGM can help solve long-standing challenges in genetic discovery. Inherited forms of breast cancer have been well-established in the medical literature. However, despite routine evaluation, the causative variant cannot be identified in some high-risk breast cancer cases. Dr. Tuomo Mantere, from University of Oulu, Finland, presented data using OGM to identify new SVs in breast cancer genes in these high-risk families. In a separate example, Dr. Gopalrao Velagaleti, from University of Texas Health, discussed work using OGM to authenticate and characterize cell lines for research laboratories. Working with contaminated and unauthenticated cell lines impacts research and can have a significant cost in research dollars. Dr. Velagaleti concluded that OGM's high resolution and short turnaround times can make it more cost-effective for authenticating and characterizing cell lines as compared to traditional methods.

"Today's sessions demonstrate emerging applications of OGM across a wide variety of solid tumor types," remarked Alka Chaubey, PhD, FACMG, Chief Medical Officer of Bionano. "We are already seeing how the ability of OGM to identify structural variants in cancer can solve unmet needs for solid tumor interrogation, in some cases immediately impacting clinical decision-making."

"We are very impressed with the data our oncology research clients shared today, including its breadth and relevance to cancer care decisions," commented Erik Holmlin, PhD, President and Chief Executive Officer of Bionano. "We believe the opportunities for OGM to consolidate laboratory workflows, reduce time to results, and positively impact human health are growing in an exciting way."

Don't miss Symposium, register now! Symposium registration is open to all and there is no charge for attending this event. Register today at https://www.labroots.com/ms/virtual-event/bngo2022.

About Bionano Genomics

Bionano Genomics is a provider of genome analysis solutions that can enable researchers and clinicians to reveal answers to challenging questions in biology and medicine. The Company's mission is to transform the way the world sees the genome through OGM solutions, diagnostic services and

software. The Company offers OGM solutions for applications across basic, translational and clinical research. Through its Lineagen business, the Company also provides diagnostic testing for patients with clinical presentations consistent with autism spectrum disorder and other neurodevelopmental disabilities. Through its BioDiscovery business, the Company also offers an industry-leading, platform-agnostic software solution, which integrates next-generation sequencing and microarray data designed to provide analysis, visualization, interpretation and reporting of copy number variants, single-nucleotide variants and absence of heterozygosity across the genome in one consolidated view.
For more information, visit www.bionanogenomics.com, www.lineagen.com or www.biodiscovery.com.

Forward-Looking Statements of Bionano Genomics

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) convey uncertainty of future events or outcomes and are intended to identify these forward-looking statements. Forward-looking statements include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things, the ability and utility of OGM to be an effective method for the identification of clinically relevant SVs, to solve unmet needs or have a significant impact on clinical outcomes, to authenticate and characterize cell lines and to consolidate laboratory workflows, reduce time to results and positively impact human health. Each of these forward-looking statements involves risks and uncertainties. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. Factors that may cause such a difference include the risks and uncertainties associated with: the impact of the COVID-19 pandemic on our business and the global economy; general market conditions; changes in the competitive landscape, including the introduction of competitive technologies or improvements in existing technologies; failure of future study results to support those demonstrated during the presentations referenced in this press release; changes in our strategic and commercial plans; our ability to obtain sufficient financing to fund our strategic plans and commercialization efforts; the ability of medical and research institutions to obtain funding to support adoption or continued use of OGM or our technologies; and the risks and uncertainties associated with our business and financial condition in general, including the risks and uncertainties described in our filings with the Securities and Exchange Commission, including, without limitation, our Annual Report on Form 10-K for the year ended December 31, 2020 and in other filings subsequently made by us with the Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made and are based on management's assumptions and estimates as of such date. We do not undertake any obligation to publicly update any forward-looking statements, whether as a result of the receipt of new information, the occurrence of future events or otherwise.

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