NEW YORK—In early November, the New York Genome Center (NYGC) launched what will become one of the largest genomic facilities in North America, establishing an unprecedented, large scale collaborative venture in genomic medicine.

Eleven of the country’s noteworthy private and academic medical centers form the foundation of NYGC, with support from the city of New York as well as private companies and foundations.

NYGC’s collaborating academic medical centers and research universities include Cold Spring Harbor Laboratory, Columbia University, Cornell University-Weill Cornell Medical College, Memorial Sloan-Kettering Cancer Center, Mount Sinai Medical Center, New York-Presbyterian Hospital, New York University/NYU School of Medicine, North Shore-LIJ Health System, Jackson Laboratory, Rockefeller University and Stony Brook University. The Hospital for Special Surgery is an associate founding member.

Together, the partner institutions reach more than 5 million patients and are known as leaders in a variety of medical specialties where gene-based medicine will have a huge impact in the coming years. Through this collaboration, scientists and physicians from member institutions will share diverse clinical and genomic data on a scale not yet realized in order to discover the molecular underpinnings of disease, identify and validate biomarkers, and accelerate development of novel diagnostics and targeted therapeutics to improve clinical care. That these institutions serve one of the most diverse populations in the world—the "melting pot" that is New York City—exemplifies the ability for this collaboration to build a data set that is representative of the national and global population.

An independent, nonprofit consortium, the NYGC will establish one of the largest genomics facilities in North America. The center will begin operations as early as spring 2012. Its 120,000 square-foot facility will be located in Manhattan, at a location as yet to be determined.

The NYGC will offer an initial technology platform of next-generation sequencers and will scale up to be fully operational within a year.

The facility will be unlike any other genomic center due to the diversity of the partnership, and in the non-competitive way the collaboration came about, says Nancy Kelley, founding executive director of the NYGC.

“This center took shape from the bottom up, rather than the top down,” Kelley says. “It combines academic and medical centers with technology members, and we are working on partnerships within the pharmaceutical industry.”

The center considers the 11 current members as the founding members, but associate members and other partners are still welcome.

“We’ve had conversations with others in the diagnostic and therapeutics spaces,” Kelley says. “The NYGC will not be strictly academic or medical—we’re looking for members who represent the full continuum of development from bench to bedside, which we will have here for the first time.”

“The New York Genome Center represents the largest collaboration to date among New York City-based biomedical and clinical research organizations. It will position its institutional partners to be at the forefront of the rapidly evolving field of genomic science and enhance the city’s position as one of the foremost centers for medical research,” notes Russell Carson, general partner, Welsh, Carson, Anderson & Stowe, who serves as chairman of the center.

Genomics are in fact already a significant growth factor in the economy, representing a more than $7 billion industry. The NYGC will leverage existing strengths in genomics and attract new talent to create a hub where companies that develop applications of this research will drive the future economy in the New York region. By 2025, the economic impact associated with commercial spin-off activities of the NYGC is expected to represent the largest
component of the total impact associated with the center.

The goal of $125 million in investment commitments to develop the center is close to being met, with $100 million in pledges collected thus far. The funds come from a variety of public and private sources, including its founding members, the Simons Foundation, Bloomberg Philanthropies, Russell L. Carson, Anthony B. Evnin and WilmerHale. Kelley singles out the commitment by New York City Mayor Michael Bloomberg’s philanthropies, and adds that an additional $2.5 million could be in play based on the exact Manhattan location chosen for the project.

Other support has been committed from New York City Economic Development Corp. and the New York City Investment Fund.

The NYGC is working with commercial and technology collaborators, including Illumina, a developer, manufacturer and marketer of life science tools and integrated systems for the analysis of genetic variation and function, and Roche, a global healthcare company.

The technology that launched the biomedical revolution and made the Human Genome Project possible—DNA sequencing—is once again on the cusp of transforming biomedical research and healthcare. While the decade following the sequencing of the human genome has contributed to knowledge of biology and disease, the NYGC partners believe that next decade will be marked by a transition to clinical care based on genomic information.

Advancements being made in DNA sequencing technology are leading to a revolution in the practice of medicine. The cost and duration of genomic sequencing is rapidly falling, the federal government is making a strong commitment to support full implementation of electronic health records, and the number of targeted drugs and companion diagnostics entering clinical practice continues to rise.

Kelley adds that part of the attraction of the new facility will be the leading-edge laboratory space for principal investigators. That space will accommodate sequencing instrumentation, robotics for high throughput library preparation, IT storage hardware for buffering and final data storage and bioinformatics and computational capabilities. NYGC staff will be able to sequence full human genomes and fulfill custom sequencing requirements. On-staff experts will be able to take a biological sample and provide a full clinical interpretation. Besides clinical diagnostic and research work, the NYGC services will support investigator research projects, collaborative work with academic institutions and industrial contract work.

Kelley adds that success will be measured qualitatively to begin.

"We believe in starting small, and making sure that we deliver," she says. "The facility will get the founding members the services they need to carry out their work. We'll also be sequencing and writing more grants, especially for NIH funding."

She says the NYGC will also become known for creating an intellectual and scientific environment from which all members can benefit.

"Our facility will create the environment for all members to devise new programs around disease states to find cures," she concludes. "Our members will use both old and new approaches for cures and for staying well, and bring these approaches to medical practice. We want to establish New York as a global thought leader in the genomics area."