

## **NYGC Launches Collaborative Cancer Genomics Research Projects Focused on Underserved Populations**

*Multi-Disciplinary Investigations to Study Wide Array of Cancers in Minority Patients:  
Bladder, Pancreatic, Breast, Prostate, Colon, Endometrial and Lung Cancers*

NEW YORK, NY (September 8, 2020) – Leading cancer scientists working with the New York Genome Center (NYGC) announced today that grants are being awarded to fund six projects that address the role of ethnicity in several major cancer types, taking advantage of the diversity of patients being treated at health care institutions throughout the New York City area.

The awards are being made under the auspices of a NYGC research initiative, called Polyethnic-1000 (P-1000), which was launched in 2018 to help address cancer care inequities in underserved populations.

Participants in the P-1000 initiative include cancer clinicians and investigators representing all of the NYGC’s member institutions, including six of New York City’s NCI-Designated Cancer Centers. The initiative is overseen by the Genome Center Cancer Group, led by nationally recognized cancer experts Nobel Laureate Harold Varmus, MD, Senior Associate Core Member, NYGC, and Lewis Thomas University Professor of Medicine, Weill Cornell Medicine, and Charles Sawyers, MD, Chair, Human Oncology and Pathogenesis Program, Marie-Josée and Henry R. Kravis Chair, Memorial Sloan Kettering Cancer Center.

Recent advances in DNA sequencing and analysis have revolutionized approaches to the prevention, risk assessment, diagnosis, and treatment of cancers. However, many ethnic groups, especially non-European minorities, have been significantly under-represented in cancer research, including clinical trials, and have not received equal benefits in clinical practice. As a result, current knowledge of tumor biology, cancer risk, and response to treatment has been primarily derived from patients of European descent. These inequities limit the understanding of the many types of cancer and may exacerbate health disparities in the United States.

“This is a remarkably exciting time in cancer research,” noted Dr. Varmus. “Technological advances have enabled scientists to conduct comprehensive genomic studies that are leading to the development of next-generation therapies, as well as diagnostic and preventative public health strategies,” he said. “The objective of P-1000 is to democratize and broaden access to the power and potential of cancer genomics.”

Dr. Tom Maniatis, the Scientific Director and CEO of the NYGC, and the Isidore Edelman Professor of Biochemistry at the Zuckerman Institute at Columbia University, commented, “The P-1000 project is exactly the kind of collaborative scientific initiative the founders of the NYGC had in mind when establishing the center in 2011. Both the scientific investigators and the participating patients are from the network of NYGC “Institutional Founding Member” hospitals throughout the city and Long Island. The initiative benefits from the extraordinary scientific talent of the cancer centers involved, and the exceptional ethnic diversity of cancer patients in New York.”

The six new research projects follow the first phase of P-1000, in which a multi-institutional network of collaborators was developed throughout New York City, including scientists, pathologists, local Institutional Review Boards and administrators; a scientific leadership steering committee and review board were established; a centralized, secure system for data management, sharing, analysis and quality controls was created; and a data sharing platform, including visualization tools, was developed.

For this next phase of P-1000, request for proposals was distributed to the members of the P-1000 community with the aim of identifying projects that would provide the greatest benefit to under-represented ethnic populations. An external review board composed of six esteemed scientists and physicians, all experts in cancer biology and cancer health disparities, reviewed the proposals and selected the projects. Chaired by Dr. Deborah Schrag (Dana-Farber Cancer Institute), the board also included Dr. Otis Brawley (Johns Hopkins), Dr. Funmi Olopade (University of Chicago), Dr. Susan Domchek (University of Pennsylvania),

Dr. Stephen Chanock (NCI), and Dr. David Beer (University of Michigan). The awardees were selected based on relevance, innovation, experimental design, achievability, and most effective use of the P-1000 network.

These new research grants have been made possible by generous gifts from NYGC Board member Weslie Janeway, the Mortimer B. Zuckerman Family Foundation, The New York Community Trust, Donna and Ben Rosen, and with support from Illumina, Inc. Funding of the first phase of the project was provided by The Mark Foundation for Cancer Research. “We are very grateful for the visionary philanthropic support that enables researchers to help answer a difficult and important question,” said Dr. Varmus. “How do cancers differ in patients with different genetic backgrounds?”

The award-winning cancer research projects include:

- “Immunogenomic Determinants of Ethnic Disparities in Clinical Outcomes for Urothelial Cancer Patients,” a Weill Cornell Medicine study to determine how ethnic diversity affects the clinical outcomes of bladder cancer. The multi-disciplinary team will be led by Drs. Bishoy Faltas and Olivier Elemento, Weill Cornell Medicine.
- “Molecular Determinants of Increased Vulnerability to Pancreatic Cancer Among African Americans,” a multi-institutional study to understand why this patient population has higher incidences and lower survival rates after diagnosis of pancreatic ductal adenocarcinoma in comparison to other populations. Lead investigators include: Drs. Alexander Krasnitz, David Tuveson, Cold Spring Harbor Laboratory; Drs. Jeff Boyd, Matthew Weiss, James Crawford, Noah Kauff, Northwell Health; Drs. Laura Martello-Rooney, Shivakumar Vignesh, Evan Grossman, Francesco Serafini, SUNY Downstate Health Sciences University and Kings County Medical Center.
- “Ethnic-based Differences Between East Asian and Caucasian Patients in Genomic, Transcriptomic and Immune Profiles of Pre-invasive and Invasive Adenocarcinoma of the Lung,” a study that aims to identify the somatic alterations in non-solid lung nodules in East Asian and Caucasian patients that explain the significant demographic, clinical and biological differences between these two groups. The multi-disciplinary research team includes Drs. Nasser Altorki, Alain Borczuk, Timothy McGraw, Giuseppe Giacconi, Olivier Elemento, Weill Cornell Medicine.
- “Molecular Links between Ancestry and Outcome Disparity in Breast and Prostate Cancer Patients Across the African Diaspora in New York City,” a study to identify molecular links between African ancestry and aggressive forms of breast and prostate cancer and investigate these as a source of racial disparities in cancer outcomes. Co-PIs include: Drs. Olivier Elemento, Cora Sternberg, Juan Miguel Mosquera, Melissa Davis, Weill Cornell Medicine; Dr. Marcin Imielinski, New York Genome Center; Dr. Paz Polak, Icahn School of Medicine at Mount Sinai; Dr. Lisa Newman, NewYork-Presbyterian Hospital.
- “Uncovering the Mechanisms of Colorectal Cancer Disparities in African Americans,” a study by researchers at Cold Spring Harbor Laboratory and SUNY Downstate Health Sciences University. The project aims to employ a multipronged approach to interrogate the genetic and non-genetic factors that can improve understanding of colorectal cancer in African American patient populations. Co-PIs include: Drs. Semir Beyaz, Hannah Meyer, Richard McCombie, Fieke Froeling, Cold Spring Harbor Laboratory; Drs. Laura Martello-Rooney, Mohammad Almeqdadi, Henry Talus, SUNY Downstate Health Sciences University.
- “Mechanisms of Endometrial Cancer Disparities in African Americans,” a collaborative study by Cold Spring Harbor Laboratory, Weill Cornell Medicine, NewYork-Presbyterian Brooklyn Methodist Hospital, and Northwell Health. The aim is to establish an annotated biobank and create the necessary clinical and experimental frameworks to gain new insights about the endometrial cancer disparities in African Americans. Lead investigators include: Drs. Semir Beyaz, Hannah Meyer, Richard McCombie, Cold Spring Harbor Laboratory; Drs. Onyinye Balogun, Hani Ashamalla, Tan Ince, Margaux Kanis, Constantine Gorelick, NewYork-Presbyterian/Brooklyn Methodist; Dr. Wen Shen, Weill Cornell Medicine; Drs. Gary Goldberg, Marina Frimer, Aaron Nizam, Northwell Health.

Over the course of the next two years, the funded researchers will work with academic health centers and community hospitals throughout the New York City region to recruit patients, perform whole-genome and RNA sequencing with cancers and normal tissues to identify differences between ethnicities that may account for disparities in occurrence, response to treatment, and survival for the cancer types under study.

Findings from the projects will be shared with the research community. Data will be stored in a repository maintained by the NYGC that will serve as a global resource for efforts to understand the roles of ethnic diversity in cancer.



## About the New York Genome Center

The New York Genome Center (NYGC) is an independent, nonprofit academic research institution focused on furthering genomic research that leads to scientific advances and new insights and therapies for patients with neurodegenerative disease, neuropsychiatric disease, and cancer. Leveraging our strengths in whole genome sequencing, genomic analysis, and development of new genomic tools, the NYGC serves as a nexus for collaboration in disease-focused genomic research for the New York medical and academic communities and beyond.

NYGC harnesses the expertise and builds on the combined strengths of our faculty, staff scientists, member institutions, scientific working groups, affiliate members, and industry partners to advance genomic discovery. Central to our scientific mission is an outstanding faculty who lead independent research labs based at the NYGC, and hold joint tenure-track appointments with one of our member institutions.

Institutional founding members of the NYGC are: Cold Spring Harbor Laboratory, Columbia University, Albert Einstein College of Medicine, The Jackson Laboratory, Memorial Sloan Kettering Cancer Center, Icahn School of Medicine at Mount Sinai, New York-Presbyterian Hospital, New York University, Northwell Health, The Rockefeller University, Stony Brook University, and Weill Cornell Medicine. Institutional associate members are: American Museum of Natural History, Georgetown Lombardi Comprehensive Cancer Center, Hackensack Meridian Health, Hospital for Special Surgery, The New York Stem Cell Foundation, Princeton University, Roswell Park Cancer Institute, and Rutgers Cancer Institute of New Jersey.

For more information on the NYGC, please visit: <http://www.nygenome.org>.

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