New York State Department of Health
Prostate and Testicular Cancer Research and Education Fund

2023 Report

I. The New York State Prostate and Testicular Cancer Research and Education Fund Background

The New York State Prostate and Testicular Cancer Research and Education Fund was created with an amendment to State Finance Law (SFL) §95-e, enacted as part of the 2014-2015 State budget. The law authorized the Commissioner of Health to provide grants for the purpose of advancing and financing prostate and testicular cancer research, support programs, and education projects, using the revenues received as part of the Prostate and Testicular Cancer Research and Education Fund. Available funding to support this initiative is limited to the amount(s) appropriated in the enacted State Fiscal Year budgets and as set by the New York State Division of Budget.

State Finance Law requires the Commissioner of Health to provide an annual report describing how monies from the fund were used in the prior calendar year. The following is a description of activities conducted in 2023 by the organizations awarded grants supported by the Prostate and Testicular Cancer Research and Education Fund.

II. Prostate Cancer Research Grants for National Cancer Institute-Designated Cancer Centers Located in New York State

A. Background

The New York State Department of Health awarded grants via a Solicitation of Interest to six National Cancer Institute-designated Cancer Centers (listed below) for a two-year contract period, beginning June 1, 2021, and ending May 31, 2023. The intent of the Solicitation of Interest was to maximize the potential impact and reach of the funding to advance research into prostate cancer to address its heavy burden on New Yorkers, and in particular those New Yorkers disproportionately impacted by this disease. The noncompetitive procurement sought to make awards in sufficient values to support hypothesis-generating research to New York State institutions with experienced principal investigators and the infrastructure to meet the intent of the grant funding. Hypothesis development is an important phase of the research process in which evidence is gathered to develop new research questions that inform future studies and establish the basis for pursuing additional funding opportunities through entities such as the National Institutes of Health, National Cancer Institute, or the Department of Defense. Awardees used the grant funding to make research awards via their internal peer review processes to investigators at or above the level of postdoctoral fellow (or equivalent) to conduct innovative, hypothesis-developing research that is determined to be either 1) no greater than minimal risk and exempt under 32 Code of Federal Regulations 219.101(I), or 2)

eligible for expedited review under 32 Code of Federal Regulations 219.110 or 21 Code of Federal Regulations 56.110 by the local Institutional Review Board of record.

1. Grantees

1. Cold Spring Harbor Laboratory Cancer Center, Cold Spring Harbor, New York
2. Herbert Irving Comprehensive Cancer Center, Trustees of Columbia University in the City of New York, Manhattan, New York
3. Laura and Isaac Perlmutter Cancer Center at New York University Langone Health, Manhattan, New York
4. Roswell Park Comprehensive Cancer Center, Buffalo, New York
5. The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, Manhattan, New York
6. Memorial Sloan-Kettering Cancer Center, Manhattan, New York (As reported in the 2022 report, this grantee was terminated for convenience in December 2022 after repeated outreach and communications from the New York State Department of Health.)

2. Work Plans

Contract work plans required that grantees:

1. Solicit research proposals that meet the Solicitation of Interest criteria,
2. Acquire peer review and select research project(s) and investigators that meet the funding criteria,
3. Engage investigators and initiate and monitor progress on selected research projects, and
4. Conduct administrative and fiscal oversight to ensure completion of all required contract activities.

B. 2023 Grantee Activities January 1, 2023, to May 31, 2023

In the last six months of the grantees' two-year contracts, from January 1, 2023, to May 31, 2023, the grantees engaged in the following activities:

Cold Spring Harbor Laboratory Cancer Center – The grantee continued to conduct a research project titled, "*New Tumor Suppressor Genes on Chromosome 10*"; Lloyd C Trotman, PhD, Principal Investigator. The research tests two innovative hypotheses; 1) there is a yet undiscovered tumor suppressor on chromosome 10 that intersects with the PTEN gene to increase the likelihood of prostate cancer recurrence, and 2) endocytosis plays a role in prostate cancer biology.

Herbert Irving Comprehensive Cancer Center, Trustees of Columbia University in the City of New York – The grantee continued to conduct two research projects. The first research project is titled, "*The influence of radiotherapy on the regenerative balance of T-cells to overcome*

therapy resistance and improve outcomes for patient's prostate cancer"; Catherine Spina, MD, PhD, Principal Investigator. The innovative hypothesis studies the influence of radiotherapy on the regenerative balance of T-cells. The project advanced into the clinical setting with a phase 2 clinical trial titled, "*Adenosine Signaling Modulation and Immune Checkpoint Inhibition with Hormone Sensitive Oligometastatic Prostate Cancer"*. The second research project is titled, "*Analyses of DNA damage response in prostate cancer*"; Corinne Abate-Shen, MD, Principal Investigator. This project investigates the functions of BRCA1 and BRCA2 in prostate cancer, guided by the hypothesis that defective DNA repair plays an important role in prostate cancer progression and treatment, particularly in the context of androgen deprivation.

The grantee submitted two proposals for external funding to expand on their research hypothesis. One was a proposal to The Prostate Cancer Foundation Challenge to expand analyses to patients with metastatic castrate-resistant prostate cancer treated with Lu 177 vipivotide tetraxetan radionuclide therapy and anti-CTLA-4 (ONC392) immunotherapy in a multi-institutional, randomized phase 2 clinical trial. The second was a proposal for funding to the National Institutes of Health Research Project Grants (R01 Grants) entitled, "*Mechanisms of Immunologic Response to Prostate and Pelvic Nodal Irradiation for Men with Prostate Cancer"*. The proposal includes a randomized phase 2 clinical trial designed to test the hypothesis that for men with high-risk prostate cancer undergoing definitive prostate radiotherapy, replacing pelvic nodal irradiation with a delayed pelvic lymph node dissection will preserve an adaptive immune response. The grantee was selected for an oral presentation, "*A forward genetic screen identifies SIRT1 as a driver of neuroendocrine prostate cancer*" at the American Association of Cancer Research's annual meeting.

Laura and Isaac Perlmutter Cancer Center at New York University Langone Health – The grantee continued to conduct the two research projects selected and begun in 2021. The first is "*Lifestyle Modification in Patients with Prostate Cancer*"; Stacy Loeb, MD, Principal Investigator. This innovative hypothesis examines an intervention to improve sleep health for patients with prostate cancer and their caregivers. The second is "*Activation of anti-tumor immunity in prostate cancer by an AR-targeting peptoid conjugate*"; Michael Garabedian, PhD, Principal Investigator. The innovative hypothesis is that treating castration-resistant prostate cancer tumors with MPC309 gives the ability to evoke innate immune cell infiltration into the tumor, and therefore could potentiate a cytotoxic T-cell response and bolster the therapeutic efficacy of immune checkpoint blockade antibodies. The grantee submitted one application for future funding to the Prostate Cancer Foundation Challenge Award, titled *"Plant-Based Dietary Patterns and Advanced Prostate Cancer"*. The grantee published the following three articles based on funded research:

- Gupta N, Patel HD, Taylor J, Borin JF, Jacobsohn K, Kenfield S, Eggener SE, Price C, Davuluri M, Byrne N, Bivalacqua TJ, **Loeb S**. Systematic review of the impact of a plant-based diet on prostate cancer incidence and outcomes. Published in *Prostate Cancer Prostatic Disease* 2022; 25:444-452.
- Cole A, Gupta N, **Loeb S**. The Plant-Based Prescription: How Dietary Change Can Improve Both Urological and Planetary Health. Published in *European Association of Urology* 2023; S0302-2838(23):02953-6.

- Habault J, Schneider JA, Ha S, Ruoff R, Doro Pereira L, Puccini J, Ranieri M, Ayasun R, Deng J, Kasper AC, Bar-Sagi D, Wong KK, Zoubeidi A, Claessens F, Wise DR, Logan SK, Kirshenbaum K, **Garabedian MJ**. A multivalent peptoid conjugate modulates androgen receptor transcriptional activity to inhibit therapy-resistant prostate cancer. *Molecular Cancer Therapeutics*, provisionally accepted in 2023.

Roswell Park Comprehensive Cancer Center – The grantee continued to conduct the three research projects implemented with this funding. The first is "*Tumor Suppressive Functions of SIRT3 in Prostate Cancer Progression*"; Subhamay Dasgupta, PhD, Principal Investigator. The innovative hypothesis seeks to define the tumor suppressive functions of SIRT3 in lethal prostate cancer progression. The second research project is "*Development of Prostate Specific NCOR2 Knockout Mouse*"; Dominic Smiraglia, PhD, Principal Investigator. This innovative hypothesis seeks to develop a new mouse model with targeted knockout of NCOR2 in the context of PTEN loss. The third is titled "*Advanced Prostate Cancer Database: single-cell analysis/digital spatial profiling*"; Gurkamal Chatta, MD, Principal Investigator. The research goal is to annotate clinical specimens and integrate two databases to better understand mechanisms of response/resistance in advanced prostate cancer at a clinical and molecular level.

The grantee received funding from The Prostate Cancer Research Program for their proposal titled, "*Targeting Prostate Cancer Metabolic Vulnerabilities in the Bone Microenvironment to Circumvent Lethal Metastatic Disease"*, presented the abstract, "*Nuclear Metabolic Pathway Drives Epigenetic Rewiring in Tumors under Nutrient-stress",* at the Cold Spring Harbor Meeting on Metabolic Signaling, and published an article based on the research; Androgen receptor (AR) heterogeneity in prostate cancer and therapy resistance. Jamroze A, Chatta G, Tang DG. *Cancer Letters*. 2021 Oct 10;518:1-9.

The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai – The grantee continued to implement two research projects. One titled, "*Targeting AngptL2 to sensitize the CRPC response to the immune checkpoint inhibitors*"; Qin Yu, PhD, Principal Investigator, focuses on the lack of success with immune checkpoint blockade in prostate cancer and data from the investigator demonstrating AngptL2 protein is up-regulated in castration-resistant prostate cancer and negatively regulated the anti-tumor immune response. The second research project is titled, "*A Study on the Impact of PIK3R1 Mutation and Insulin-Glucose Metabolism in Prostate Cancer*"; Goutam Chakraborty, PhD, Principal Investigator, and hypothesizes that mutation/alterations in the PIK3R1-insulin-glucose metabolism pathway contributes to metastatic castration-resistant prostate cancer which has not previously been reported.

C. 2023 Post-contract Grantee Activities June 1, 2023 to November 31, 2023

Per the contracted work plans, *New York State Prostate Cancer Research Grants for National Cancer Institute-Designated Cancer Centers Located in New York State* grantees are required to complete and submit three post-contract reports, at six-, 12-, and 24-months after the May 31, 2023, contract end date. The intent of the post-contract reports is to solicit information to determine how well the funding met the intent to support hypothesis-generating research which will identify new avenues for research and establish the basis and rational for additional funding opportunities based on that research. Grantees reported on any activities to: 1) present their research at professional meetings and institutional in-services, 2) publish their research, and 3) submit applications for future funding to support further development of their research. Grantees reported the following post-contract activities for the period June 1, 2023, to November 31, 2023:

Cold Spring Harbor Laboratory Cancer Center

Applications for Future Funding (3):

1. Funder: The National Institute of Health Research Project Grants, more commonly referred to as R01 Grants. The R01 Grant provides funding for health-related research and development. Research title: *Metastasis of PTEN Mutand Prostate Cancer* (Awarded)
2. Funder: The National Institute of Health R01 Grant. Research title: *Biology and Vulnerabilities of POU2F3+ Tuft Cell-like Carcinomas* (Pending)
3. Funder: The Cold Spring Harbor Laboratory Cancer Center. Research title*: Cancer Invasion as a Process to Target for the Treatment of Carcinomas* (Awarded)

Herbert Irving Comprehensive Cancer Center, Trustees of Columbia University in the City of New York

Research Presentations (1):

Presented to: NRG Oncology Cooperative Group. Presentation: "*Ongoing phase 2 clinical trial, SBRT-AMICA and translational investigations leveraging patient tumor tissue and peripheral blood"*.

Laura and Isaac Perlmutter Cancer Center at New York University Langone Health

Articles Submitted for Publication (1):

Habault J, Schneider JA, Ha S, Ruoff R, Pereira LD, Puccini J, Ranieri M, Ayasun R, Deng J, Kasper AC, Bar-Sagi D, Wong KK, Zoubeidi A, Claessens F, Wise DR, Logan SK, Kirshenbaum K, Garabedian MJ. A Multivalent Peptoid Conjugate Modulates Androgen Receptor Transcriptional Activity to Inhibit Therapy-resistant Prostate Cancer. *Mol Cancer Ther*. 2023 Oct 2;22(10):1166-1181. (Published)

Applications for Future Funding (1):

Funder: National Institute of Health for an R01 grant. Research title: "*Peptoid Conjugates Targeting Prostate Cancer"* (Pending)

Roswell Park Comprehensive Cancer Center

Research Presentations (3):

1. Presented to: Society of Basic Urology Research, San Antonio Texas, November 2023. Presentation: "*Tumor intrinsic lipid dysregulation induces immunometabolic reprogramming to create a suppressive prostate tumor microenvironment"*. Presenters: Alphonse Dimeck[1], Tao Dai[1], Mark Long[2], Hai Wang[3], Subhamoy Dasgupta[1] [1]Department of Cell Stress Biology, [2]Department of Biostatistics and Bioinformatics, [3]Department of Molecular and Cellular Biology, Roswell Park Comprehensive Cancer Center, Buffalo, NY 14263.
2. Presented to: Society of Basic Urology, San Antonio Texas, November 2023. Presentation: *"Bone Microenvironment Specific Metabolic Adaptations Drives Metastatic Prostate Cancer*". Presenter: Dr. Subhamoy Dasgupta.
3. Presented to: The Great Lakes Nuclear Receptor Meeting, October 2023. Presentation: "*Coregulator SRC-2 dependent increased lipid metabolism induces an immunosuppressive prostate tumor microenvironment"*. Presenters: Alphonse Dimeck[1], Tao Dai[1], Mark Long[2], Hai Wang[3], Subhamoy Dasgupta[1] Department of Cell Stress Biology, [2]Department of Biostatistics and Bioinformatics, [3]Department of Molecular and Cellular Biology, Roswell Park Comprehensive Cancer Center, Buffalo, NY 14263

The Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai

Research Presentations (2):

1. Presented to: International Seminar on Plants and Microbes: Health and Food, University of Calcutta. Presentation: "*Metabolic Reprogramming Lethal Cancer: Impact of diet based therapeutic strategy"*.
2. Presented to: Prostate Cancer Foundation 30th Annual Scientific Retreat. Presentation: "*Metabolic Reprogramming as a Driver of Lethal Prostate Cancer"*.

III. Peer Education, Outreach, and Shared Decision Making for Persons at High Risk of Prostate Cancer

The New York State Department of Health released a Request for Applications (RFA) on January 10, 2023, seeking applications to RFA# 20223/Grants Gateway #DOH1-PCPEER-2024, *Peer Education, Outreach, and Shared Decision Making for Persons at High Risk of Prostate Cancer*. An applicant conference was held on February 1, 2023, with 36 registrants and the Questions and Answers were posted on March 1, 2023.

This Request for Applications was informed by state experts in prostate cancer research, risk reduction, prevention, early detection, diagnosis and treatment; state and national organizations providing peer education, outreach, and prevention services to those at high risk for prostate cancer; state and local organizations offering prostate, health promotion and education, or other services and programs by and for persons who identify as Black; and the New York State Department of Health Bureau of Cancer Prevention and Control current and former contractors that offer education, promotion, outreach, peer education, and/or facilitate access to cancer screening services. It was also informed by New York State data on prostate

cancer burden and research on the evidence base for effective prostate cancer early detection and prevention programming.

The intent of the Request for Applications was to award four contracts to agencies to support peer education and outreach, personalized coaching, linkage to community services to address barriers to health care, and referral to health care providers for prostate cancer screening. Awarded applicant (grantee) activities will be directed to men who are Black, ages 45 to 69 years old, who bear a disproportionately high burden of prostate cancer. Programming will address the risks and benefits of prostate cancer screening and will provide supports to engage program participants in shared decision-making about prostate cancer screening with a health care provider. Programming will be prioritized and designed for men who are Black but may include others at risk of prostate cancer. Programming will be offered free of charge. Programs will be offered within each of four service areas, identified based on prostate cancer mortality rates and percent of the population who are Black males.

The New York State Department of Health made four awards on June 29, 2023, to the highest scoring application in each of four counties, Bronx, Erie, Kings (Brooklyn), and Monroe. The awards are for the five-year period beginning October 1, 2023, and ending September 30, 2028; the funding value for each of the awards is $130,000 annually for a five-year total of $650,000 for each of the four awardees. The following organizations were awarded:

Service Region	**Awardee**
Bronx County	The Institute for Family Health
Kings County (Brooklyn)	Weill Medical College of Cornell University
Monroe County	University of Rochester
Erie County	Health Research, Inc.

Contracts for all four awardees were executed in September 2023 and began October 1, 2023. Grantees engaged in the following activities in the first three months of their contracts, from October 1, 2023, through December 31, 2023:

- New York State Department of Health staff developed and provided training, technical assistance, and guidance to the new grantees to orient them to the work plan, performance measures, program expectations, deliverables, and fiscal, administrative, and reporting requirements. Grantees were provided with an implementation guide developed by New York State Department of Health staff that includes a template they will use to develop an annual outreach and education plan, slides for their use conducting group and one-on-one prostate cancer education sessions, a shared decision-making guide about prostate cancer screening for use with health care providers, an assessment tool to identify and address individual client barriers to receipt of health care for prostate cancer risk assessment, a grantee reporting template, and articles to inform development of outreach and education for men who are Black on prostate cancer screening. New York State Department of Health

staff also conducted routine, monthly meetings with each grantee and a kick-off meeting for all grantees in early October.

- In the first three months of the grant period, the grantees hired peer educators, met with potential community partners to engage them in program recruitment, education, and outreach activities, and developed their annual outreach and education plans.

IV. Summary Financial Plan

Cash Disbursement Summary

Cash Revenue in Account Start of SFY 22-23	$3,288,851
Disbursements SFY 22-23	$372,223
Cash Revenue in Account Start of SFY 23-24	$3,177,849
Actual Disbursements SFY 23-24	$449,785
Cash Revenue in Account as of 1/23/24	$3,034,471

Projections SFY 20- 26	**2021-22**	**2022-23**	**2023-24**	**Projected 2024-25**	**Projected 2025-26**
Beginning Balance	$3,154,137	$3,288,851	$3,177,849	$3,074,437	$2,854,437
Receipts*	$192,568	$261,221	$346,374	$300,000	$300,000
Disbursements	($57,854)	($372,223)	($449,785)	($520,000)	($520,000)
Ending Balance	**$3,288,851**	**$3,177,849**	**$3,074,478**	**$2,854,437**	**$2,634,437**

*SFYs 23 - 26: the estimated revenues are based on prior years.