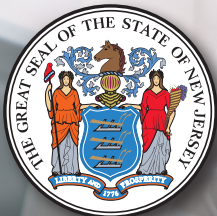


# New Jersey Commission on Cancer Research

**Annual Report 2020-21**

**Dedicated to conquering cancer  
through scientific research**



New Jersey  
Commission on  
Cancer Research

## **Annual Report 2020-21**



**New Jersey Department of Health**  
PO Box 360  
Trenton, NJ 08625-0360

609-913-5008

<https://www.nj.gov/health/ces/cancer-researchers/njccr/>

*Dear Governor Murphy,*

**A**s Chair of the New Jersey Commission on Cancer Research (NJCCR) it gives me great pleasure to report on our activities for 2020 and 2021.

The NJCCR was the first Commission established almost 40 years ago (P.L. 1982,c.40 (C.54:40A-8 et al) to fund cancer research in New Jersey. Since that time the NJCCR has awarded more than \$45 million of peer reviewed cancer research grants and fellowships. Our grantees have leveraged a return of over \$10 million in federal research funding for every NJCCR dollar awarded for over a total of \$455 million.

The mission of the NJCCR is to ensure that the citizens of New Jersey receive the fullest benefit of our nation's fight against cancer through the promotion and funding of research into the causes, prevention, and treatment of cancer. Although 2020 and 2021 posed challenges in the field of research due to the COVID-19 pandemic, the number of grant awards for 2021 increased as a result of a generous \$5 million one- time state appropriation for childhood cancer research. We are looking forward for the State to pass legislation to support a non-lapsing fund to provide stable research funding. We do know that cancer mortality will increase over the next several years because of COVID-19.

We have an amazing group of dedicated volunteer members that serve on the NJCCR. Our commissioners are engaged in cancer research activities throughout the great state of New Jersey ensuring that we have representation from the field of academic research, clinicians in hematology-oncology, non-profits, education, advocacy, and the community. We recognize the work of our scientists and their affiliated organizations at our Annual Cancer Research Symposium for their outstanding projects and dedication to advance cancer research.

It is an honor to serve the citizens of New Jersey by being both a member of the NJCCR and the Chairperson. As one of the eight members volunteering their time to serve on the NJCCR, I wish to thank you for your support of our work. We look forward with optimism and hope to exciting future research projects in our State and to the heightened awareness and understanding of cancer research in New Jersey.

*Sincerely,*

*Kenneth Adler*

**Kenneth Adler, M.D., F.A.C.P.**

Morristown Medical Center

*Chairperson, New Jersey Commission on Cancer Research*

## A Message From the Chair





*The New Jersey Commission on Cancer Research was ushered in by the Cancer Research Act, to support its activities. This Act resulted from the collaborative efforts of people with cancer and their families, clinicians, academicians, scientists, public officials, and representatives of research, pharmaceutical industry, and non-profit organizations.*

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### Did you know

- ❖ **Cancer is the 2nd leading cause of death followed by heart disease.**
- ❖ New Jersey is ranked 5th in the nation in the incidence of cancer.
- ❖ But is ranked in the bottom half among all the states for cancer deaths in the U.S.
- ❖ An estimated 55,730 people in New Jersey will be diagnosed with cancer in 2022, and 15,710 will succumb to the disease, according to the American Cancer Society's report "Cancer Facts & Figures 2022".
- ❖ The New Jersey Commission on Cancer Research (NJCCR) promotes significant and original research into the causes, prevention and treatment of cancer and serves as a resource to providers and consumers of cancer services.
- ❖ Since 1983, the NJCCR has awarded more than \$52 million for over 915 peer-reviewed cancer research grants and student fellowships to support discovery-oriented basic science cancer research.



Last year was unlike any seen in a lifetime. In just a few months, the deadliest pandemic in 100 years took a devastating toll on healthcare in America. The U.S. Department of Health and Human Services declared a public health emergency on January 31st, 2020, which was followed by a declaration of a national emergency by the President of the United States on March 13th. New Jersey declared its state of emergency on March 9th (Executive Order #103). However, the rapid spread of the virus spread quickly across the country and forced many states to issue “stay-at-home” restrictions.

As the pandemic spread across the U.S. and the world, New Jersey’s healthcare system was severely overburdened, and the economic health and welfare of residents were stressed. Many businesses, institutions, academic medical centers closed their research laboratories, while others shut down critical cancer research. Some researchers were forced to redirect their research to COVID-19. Although the pandemic caused unprecedented disruptions in cancer research, the need for ongoing cancer research remains a priority. Recent studies have shown that cancer patients are often immunocompromised, and reports have suggested that cancer patients, especially those receiving treatment, are at increased risk of dying of COVID-19 in part due to comorbidities, frequent health exposures, and the effects of cancer therapies. However, predicting the impact of COVID-19 on the future of cancer research remains unknown. Most importantly, research remains our best defense against cancer because it is the driving force behind all clinical and policy advancements to improve prevention, detection, diagnosis, and treatment of all cancers. These advancements promise hope for curing some of the many diseases we call cancer.

The New Jersey Commission on Cancer Research was created in 1983 by P.L. 83, Ch.6, also known as the Cancer Research Act, to promote and fund cancer research projects for individual scientists at academic and research institutions. This Act, signed into law by former Governor Kean mandates the NJCCR to:

1. Review and authorize approved research projects;
2. Apportion all available funds to qualifying research institutions to finance approved research projects and necessary institutional support services;
3. Ensure that funds appropriated to approved research projects are not diverted to any other use;
4. Take steps necessary to encourage the development within the State of research projects on:
  - a. The causes of cancer; and
  - b. Pain management and palliative care for persons diagnosed with cancer;
  - c. Compile a directory of all cancer research projects being conducted in the State.

This report is written in accordance with the enabling Statute, which stipulates that the NJCCR shall provide a report to the Governor and Legislature on the status of the Commission’s activities and the results of its funded research efforts. A copy of the Statute is attached hereto as Appendix II.

### Key Highlights

- ❖ Progress made by researchers has been presented in abstracts, scientific conferences, symposia, and meetings.
- ❖ Commission programs have facilitated wider scientific interactions and numerous active research collaborations, along with out-of-state researchers.
- ❖ Success in achieving Commission funding has resulted in academic and career advancement for New Jersey researchers, including doctoral dissertations.

**The New Jersey Commission on Cancer Research was ushered in by the Cancer Research Act, to support its activities. This Act resulted from the collaborative efforts of people with cancer and their families, clinicians, academicians, scientists, public officials, and representatives of research, pharmaceutical industry, and non-profit organizations. The Act dictates that the NJCCR receive no less than \$1 million annually for research into the causes, prevention, and treatment. In more recent years, the NJCCR has received \$2 million annually for cancer research. Aside from the annual \$1 to \$2 million state appropriation, the NJCCR receives funding from two other sources; the sale of the “Conquer Cancer” license plate, and state income-tax check-offs for breast, prostate, and lung cancers. These designated check-offs support research for breast, prostate, and lung cancer.**



**T**o ensure that the citizens of New Jersey receive the fullest benefit of our nation's fight against cancer through the promotion and funding of research into the causes, prevention, and treatment of cancer.

### **Simply stated, the Commission's goals are:**

- ❖ To support meritorious research projects that advance the understanding of prevention, diagnosis, treatment, and survivorship of cancer.
- ❖ To support the progression of research from bench to bedside.
- ❖ To enhance the reputation of New Jersey as a leader in the field of cancer research.
- ❖ To facilitate the initiatives of New Jersey scientists to larger grants from sources such as the National Institutes of Health and
- ❖ Provide funding to promising and productive investigators who experience a short-term interruption in funding for research projects focused on cancer prevention, diagnosis, treatment, and survivorship.

### **More specifically, the Commission works to:**

- 1) Advance the field of scientific cancer research in New Jersey by encouraging established scientists to apply their expertise to cancer research.
- 2) Foster collaborative, interdisciplinary approaches to cancer research.
- 3) Nurture future generations of cancer researchers by supporting young scientists and pre-doctoral and post-doctoral fellows.
- 4) Disseminate the research findings generated by scientists at the Commission's annual symposium and
- 5) Compile a directory of all cancer research projects in the State.

## Mission and Goals

## Membership and Organization

Created as a semi-independent public body, the New Jersey Commission on Cancer Research is “. . . allocated in, but not . . .” the New Jersey Department of Health. It is subject to all the administrative rules and procedures of the Department, but is not part of the Department’s budget

The Commission establishes and oversees the administrative operations of the grant-making process as well as other programmatic activities that are implemented by its administrative staff. Eleven uncompensated members, including the Commissioners of the New Jersey Department of Health, the Department of Environmental Protections or their appointed designees, and nine citizens of New Jersey are appointed by the Governor and with the advice and consent of the Senate serve a three-year term. New Jersey residents wishing to be considered for an appointment may submit their name to the Governor’s Office of Appointments. Information on how to apply can be found at: <https://www.nj.gov/governor/admin/bca>.

## Administrative Functions

The Commission’s leadership and staff provide the vital linkages to implement its programs and ensure the day-to-day operations. The office staff manages the operations including program administration, interaction with applicants and grantees, contract administration, budgeting, and financial matters, record-keeping, reporting, and managing outside contracts such as advisory consultants.

### A Snapshot of a Year in Review:

As of this writing, there are now roughly 33.6 million confirmed COVID-19 cases in the United States, with a death toll of over 1,030,000 from the disease. (KPMG COVID-19 Supplement)

Cancer researchers are uniquely positioned to respond to many of the challenges posed by COVID-19.

COVID-19 has significantly disrupted many aspects of cancer research, including the following: supply chains, closure of laboratories, and redirection of research for COVID-19.

**A**lthough we have made incredible progress against cancer, the disease continues to be an enormous public health challenge. In 2020, making further inroads against cancer has been further complicated by COVID-19. As one example, it is estimated that there will be at least 10,000 additional deaths from breast cancer and colorectal cancer over the next decade in the United States due to the adverse effect of COVID-19 on screening and treatment.<sup>1</sup>

Even though we are making great strides, cancer continues to be an enormous public health challenge. One challenge is that the number of new cancer cases is projected to increase dramatically in the coming decades, with the rise in the U.S. alone projected to be from just over 1.8 million in 2020 to more than 2.3 million in 2040. This sharp increase is due to the overall population growth and the segment of the U.S. population that accounts for most cancer diagnoses are those aged 65 and older. With the rising number and proportion of older adults with cancer in New Jersey over the coming decades, attention to interventions that will decrease the burden of cancer among this population is critical.

Another critical challenge is the fact that the burden of cancer is disproportionately impacting racial and ethnic minorities and underserved populations. The adverse differences in the burden of cancer among racial and ethnic minorities, including African Americans and Hispanics, are one of the most pressing public health challenges that we face. For example, African Americans have had the highest overall cancer death rate of any racial or ethnic group in the U.S. for decades. Although less pronounced now these disparities in cancer incidence and death persist for racial and ethnic minority groups in the U.S.

Cancer research continues to be the best defense against cancer because it spurs innovation and allows for the development of better approaches to preventing, detecting, diagnosing, treating, and curing many types of cancer.

## Public Health Challenge

***The adverse differences in the burden of cancer among racial and ethnic minorities, including African Americans and Hispanics, are one of the most pressing public health challenges that we face.***

## Funding

**A**side from the annual \$4 million state budget appropriation, the NJCCR receives funding from two other sources: Sale of the “Conquer Cancer” license plate, and state income-tax check-offs for breast, prostate and lung cancer.

## 2020 and 2021 Grants and Fellowships

**T**he NJCCR funds research projects that focus on the genetic, biochemical, viral, microbiological, environmental, behavioral, socioeconomic, demographic, and psychosocial aspects of cancer prevention, causes, development, treatment, and palliation. Such research may include studies that relate to fundamental aspects of cancer; however, these projects must include biologic systems, tissues, cells, human subjects, and/or other materials that have a direct relationship to cancer.

The NJCCR offers Pre- and Post-Doctoral Fellowships to trainees at New Jersey non-profit research institutions with formally established and active graduate research programs. Candidates must apply for a fellowship under the guidance of a Sponsor – a scientist (tenured, tenure-track, or equivalent position) capable of providing mentorship to the Fellow. In addition to aiding in the planning, execution, and supervision of the proposed research, the Sponsor’s role is to foster the development of the Fellow’s overall knowledge, technical and analytical skills, and capacity for scientific inquiry. The Sponsor is expected to assist the Fellow in attaining his/her career goals. Awards are made to institutions rather than individual scientists for the support of the trainee under the direct supervision of the Sponsor.

## Type of Grant Programs

**Grant programs are designed to provide scientific opportunities to attract research scientists. Awards are intended to promote collaboration among cancer researchers in New Jersey as well as spark innovative research. The intent is to advance research as opposed to providing long-term support. The NJCCR anticipates that this support will lead investigators to acquire the necessary levels of preliminary data, so they may compete competitively and secure future federal grant opportunities. The type of grants funded by the NJCCR include the following:**

### Bridge Research Grants

The purpose of the Bridge Grants is to enhance cancer-related research at New Jersey Institutions by providing funding to promising and productive investigators who anticipate a short-term interruption in funding for research projects focused on cancer prevention, diagnosis, treatment, and survivorship. Funding for the Bridge Grants ranges between \$200,000 to \$400,000 for two years. The goal of the bridge grant program is to strengthen the competitive position of faculty

## 2020 & 2021 Grants and Fellowships

members whose extramural grant applications were reviewed and scored highly, but were not funded. Below is a project summary of the Bridge Grant recipients:

### 2020 Bridge Grants and Recipients

**Dr. Zhiyuan Shen, Principal Investigator**

**Project Period 01/01/2020 – 12/31/2021**

**\$200,000**

**Rutgers, The State University of New Jersey,  
Cancer Institute of New Jersey**

#### **Project Title & Summary:**

***“Functions of SETD4 in Radiation Response.”***

Our new NIH R01 application (R01CA247288) entitled “Regulation of Radiation Response by Methyl-transferase SETD4” received an impact score of 39 and a percentile of 27% in June-2019. Although the Study Section identified many strengths in our application, including the potential significance, the novelty, some of the research approaches, the excellent environment, and the qualification of investigator, several weaknesses were mentioned in the critiques. In this NJCCR Bridge Funding Award application, we will propose critical experiments to collect additional preliminary data to address the concerns raised by NIH Study Section. These experiments include 1) to further illustrate the roles of Setd4 in radiation and DNA damage response; 2) to screen additional cancer cell lines for Setd4 expression to further justify the clinical relevance of the project; 3) to validate new antibodies for SET4 detection; 4) to perform methylation assays to determine whether there is additional lysine(s) in Ku70 that can be methylated by Setd4, and 5) to perform an initial characterization with the newly built transgenic mouse models to justify the feasibility of the approaches. The results of those studies will render our revised application be much more competitive.

#### **Contact Information:**

**Dr. Zhiyuan Shen**

[shenzh@cinj.rutgers.edu](mailto:shenzh@cinj.rutgers.edu)

**Dr. Sharon Pine, Principal Investigator**

**Project Period 01/01/2020 – 06/30/2022**

**\$200,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“Impact of racial differences in tumor biology on lung cancer health disparities.”***

Lung cancer is the leading cause of all cancer deaths in the U.S. and worldwide. African-American men have a higher incidence of lung cancer than European-American men, even after adjusting for smoking and socioeconomic factors. The

## 2020 Bridge Grants and Recipients

***The NJCCR offers Pre- and Post-Doctoral Fellowships to scientists at New Jersey non-profit research institutions with formally established and active graduate research programs.***

### 2020 Bridge Grants and Recipients

biological factors responsible for racial differences are not yet understood. The goal of this project is to define the mechanisms by which a cell signaling pathway, called the JAK/STAT3 pathway, operates as a biological contributor to health disparities in non-small cell lung cancer (NSCLC). NSCLC is the most common type of lung cancer. Our preliminary data suggest that NSCLC from African Americans are more likely than NSCLC from European Americans to have over-activated JAK/STAT3 which leads to increased cell survival and resistance to therapy. The premise of this application is that the JAK/STAT3 signaling axis is inappropriately activated in the context of NSCLC, particularly among tumors from African Americans and that a specific therapeutic intervention targeting JAK/STAT3 signaling will be of clinical benefit to this molecular subset of patients with NSCLC. The purpose of this Bridge funding proposal is to generate additional preliminary data which will strengthen our R01 proposal. In this bridge funding project, we will examine the biological differences between NSCLCs among African Americans and European Americans, by analyzing data that is already publicly available. We will also demonstrate our ability to alter the DNA sequence of genes in the JAK/STAT3 pathway, which is a key experiment to show we can complete the studies proposed in the R01. Third, we will obtain mice called “humanized mice” from a commercial source. These mice will receive a treatment similar to a bone marrow transplant in humans. We will use this model to explore how immune cells infiltrate the lung tumor. Ultimately, our work will uncover a novel set of biological determinants of NSCLC health disparities, and provide a path to clinical trials to improve the clinical outcome of NSCLC patients and reduce lung cancer health disparities.

#### Contact Information:

**Gina Castellano**

[Gmc184@gsbs.rutgers.edu](mailto:Gmc184@gsbs.rutgers.edu)

**Dr. Tessa Bergsbaken, *Principal Investigator***

**Project Period 01/01/2020 – 06/30/2022**

**\$200,000**

**Rutgers, The State University of New Jersey,  
Cancer Institute of New Jersey**

#### Project Title & Summary:

***“Differentiation and function of intestinal tissue-resident.”***

This proposal seeks to uncover the role of inflammation in the development of tissue-resident memory T cells, which play a critical role in controlling infection and malignancies at mucosal surfaces.

CD8+ T cells are instrumental in protecting the host from a variety of infections and malignancies. These cells recognize foreign antigens and eliminate pathogen-infected or tumor cells through direct killing and production of inflammatory



## 2020 & 2021 Grants and Fellowships

cytokines. Many of these CD8+ T cells reside in our body's mucosal and barrier surfaces, and these tissue-resident memory T (Trm) cells stay positioned in tissues throughout life and are poised to respond rapidly to reinfection at these surfaces. This proposal uses infection with intestinal pathogens to address the influence of inflammatory cytokines on the programming of intestinal Trm cells and uncover the mechanism by which these signals maximize their number and persistence within the tissue. Inflammatory signals drive the development of unique Trm populations, and these studies will also test the hypothesis these inflammatory Trm subsets will have distinct functions. Understanding conditions that support the differentiation and function of this important cell population will provide insight into how vaccination strategies can be modified to elicit protective immune responses to both infections and cancer.

### Contact Information:

**Dr. Tessa Bergsbaken**

[t.bergsbaken@rutgers.edu](mailto:t.bergsbaken@rutgers.edu)

**Dr. Kiran Madura, Principal Investigator**

**Project Period 01/01/2020 – 12/31/2021**

**\$200,000**

**Rutgers, The State University of New Jersey**

### Project Title & Summary:

**“Understanding the Mechanism of Substrate Delivery to the Proteasome.”**

The ubiquitin/proteasome system (UPS) degrades damaged proteins, as well as regulatory factors that are no longer required. Proteins including p53, beta-catenin, and many proto-oncogene products (p21; cJun; cyclins) are all degraded by the UPS. Although the great majority of well-studied substrates of the proteasome are nuclear proteins it is not known how any of them are transported to the proteasome. This represents an underappreciated aspect of the protein clearance process, and the study of substrate transport can uncover new therapeutic targets.

Inhibitors of the proteasome are currently used in the clinic to slow the growth of malignant cells. Unfortunately, these drugs inhibit proteasomes in all tissues thereby causing considerable toxicity. Therefore, treatment outcomes can be improved by identifying mechanisms in the UPS that can be more specifically inhibited. In a recent clinical trial we conducted at the Cancer Institute of NJ (with oncologists Dr. Roger Strair and Dr. Mecide Gharibo), we characterized over 100 multiple myeloma patients and determined that 15% failed to respond to bortezomib treatment. This is an important discovery because it allows clinicians to identify non-responders (before treatment), and provide them with alternate treatment regimens. The underlying cause of the failure to respond

## 2020 Bridge Grants and Recipients

*The purpose of the Bridge Grants is to enhance cancer-related research at New Jersey Institutions by providing funding to promising and productive investigators who anticipate a short-term interruption in funding for research projects focused on cancer prevention, diagnosis, treatment, and survivorship.*

### 2020 Bridge Grants and Recipients

to proteasome inhibitors is not known, but could be related to proteasome mislocalization – an important focus of this study.

The studies proposed here are expected to identify new candidates for therapeutic drug discovery. Verification of our model that nuclear proteins are exported to proteasomes on the nuclear surface would represent a paradigm shift from the current thinking.

**Contact Information:**

**Dr. Kiran Madura**

[maduraki@rwjms.rutgers.edu](mailto:maduraki@rwjms.rutgers.edu)

### 2021 Bridge Grants and Recipients

#### 2021 Bridge Grants and Recipients

**Dr. Antonina Mitrofanova, Principal Investigator**

**Project Period 05/01/2021 – 04/30/2023**

**\$249,999**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“Scalable generalizable framework for predicting treatment response in prostate cancer.”***

Identification of patients with poor or favorable treatment responses before therapy administration is invaluable for improving cancer course and management. This proposal is dedicated to developing a novel generalizable computational paradigm to uncover genomic and transcriptomic mechanisms of therapeutic resistance in prostate cancer and predict patients at risk of treatment failure, which will be shared with a wide scientific community through an open-source containerized application. Although our proposal is motivated by resistance to androgen-deprivation in prostate cancer, our innovative paradigm can be broadly applicable to study resistance to various therapeutic regimens in other cancer types and diseases.

**Contact Information:**

**Dr. Antonina Mitrofanova**

[amitrofa@shp.rutgers.edu](mailto:amitrofa@shp.rutgers.edu)

**Dr. Wenwei Hu, Principal Investigator**

**\$400,000**

**Project Period 05/01/2021 – 04/30/2023**

**Rutgers, The State University of New Jersey,**

**Cancer Institute of New Jersey**

**Project Title & Summary:**

***“The role of LIF in cancer initiating cells and colorectal tumorigenesis.”***

Leukemia inhibitory factor (LIF) is a multi-functional cytokine. LIF has a complex role in tumorigenesis; LIF has been reported to suppress or promote tumorigenesis in different types of cancers. Emerging evidence, including ours, has shown that LIF is frequently overexpressed in colorectal cancer (CRC). Further, LIF overexpression is often associated with poor prognosis in CRC patients. These observations strongly suggest a critical role of LIF in promoting colorectal tumorigenesis. Currently, the precise role and mechanism of LIF in colorectal tumorigenesis are poorly defined. Colorectal tumor-initiating stem-like cells (TICs) play a critical role in CRC initiation, progression and resistance to therapy. Eliminating TICs has been actively tested as a therapeutic strategy for CRC. Our recent study shows that LIF is present in the intestinal stem cells (ISC) niche and is essential to maintaining ISC number and functions. Oncogenic activation in ISCs plays a critical role in the initiation of CRC. Our preliminary studies further suggest that LIF promotes colorectal TIC number and functions. These findings prompt us to hypothesize that LIF is essential for colorectal TIC number and functions, which in turn promotes colorectal tumorigenesis. We further hypothesize that targeting LIF and LIF-driven metabolic reprogramming can suppress colorectal TICs and inhibit colorectal tumorigenesis. In this proposed study, we will determine the role of LIF in colorectal tumorigenesis and colorectal TIC number and functions by using different mouse models.

If accomplished, this study will establish the critical role of LIF in CRC, reveal its underlying mechanisms, and provide the rationale and base for the development of new therapeutic targets and strategies for CRC with LIF overexpression.

**Contact Information:**

**Dr. Wenwei Hu**

**[Wh221@cinj.rutgers.edu](mailto:Wh221@cinj.rutgers.edu)**

## 2021 Bridge Grants and Recipients

## 2021 Bridge Grants and Recipients

**Dr. Isaac Y. Kim, Principal Investigator**

**\$400,000**

**Project Period 05/01/2021 – 04/30/2023**

**\$400,000**

**Rutgers, The State University of New Jersey**

### **Project Title & Summary:**

***“Characterization of AR23 (MTX), a novel PROTAC molecule targeting androgen receptor splice variant 7”***

Our goal is to develop an effective treatment for men with lethal prostate cancer (CaP). These patients uniformly have a castration-resistant disease that is no longer responsive to second-line anti-androgens. We propose to use our novel proteolysis targeting chimera (PROTAC), MTX-23, as a tool compound to investigate the strategy of targeting the androgen receptor (AR) DNA-binding domain (DBD) to degrade the androgen receptor (AR) splice variant AR-V7, which is linked to the majority of end-stage CaP. The most important output of this application will be the identification of a development candidate that can be progressed to clinical trial. In contrast to localized CaP, metastatic disease is incurable due to the occurrence of castration-resistant prostate cancer (CRPC). For men with CRPC, second-line anti-androgen therapy (SAT) is the cornerstone of care. However, SAT agents have a limited value because of the inevitable emergence of resistance. The expression of AR-V7 provides a major mechanism for overcoming SAT, as this AR splice variant does not contain the ligand-binding domain. AR-V7 induces resistance to various SAT drugs and has been detected in 100% of bone metastases following SAT treatment. Altogether, by the end of this project, we aim to establish development candidates for a clinical trial.

### **Contact Information:**

**Dr. Isaac Yi Kim**

[kimiy@cinj.rutgers.edu](mailto:kimiy@cinj.rutgers.edu)

**Dr. Elisa Bandera, Principal Investigator**

**Project Period 04/30/2021 – 04/30/2023**

**\$400,000**

**Rutgers, The State University of New Jersey**

### **Project Title & Summary:**

***“Impact of obesity-related factors on breast cancer survivorship among minority and medically underserved populations.”***

Breast cancer (BC) is the most common cancer and the leading cause of cancer death among Hispanic women in the United States, a rapidly growing population. Compared to non-Hispanic whites (NHW), Hispanic women tend to be

## 2020 & 2021 Grants and Fellowships

diagnosed with BC at a younger age, with more aggressive features, are more likely to receive suboptimal treatment, and experience worse health-related quality of life, similar to what has been reported for Black/African American (AA) women. Obesity and obesity-related comorbidities place a major burden on BC survivors, disproportionately affecting Hispanics and AAs, and have been shown to be associated with poorer patient-reported outcomes, including quality-of-life, and poorer prognosis. However, little is known about the impact of measures of adiposity, such as body mass index and percent body fat and fat mass and measures of central obesity (waist circumference and waist-to-hip-ratio) on patient-reported outcomes among Hispanic and AA women.

This Bridge funding will support preliminary studies after the COVID-19 pandemic started, to support two parallel cancer survivorship cohorts and the submission of two R01 grants to the NIH. Our hypotheses are 1) Participation rates will be similar in Hispanic and AA/Black breast cancer survivors, and similar to rates we observed before the COVID-19 pandemic; 2) Obesity patterns differ in Hispanic and AA/Black breast cancer survivors, with Hispanic women being more likely to have central obesity and AA/Black women more likely to have morbid obesity; and 3) Obesity is associated with worse patient-reported outcomes, including quality of life, fatigue and sleep disturbance, with stronger impact among Hispanic women.

### Contact Information:

**Dr. Elisa Bandera, MD, PhD**  
[banderel@cinj.rutgers.edu](mailto:banderel@cinj.rutgers.edu)

**Dr. Derek Sant'Angelo, Principal Investigator**

**05/01/2021/ - 04/30/2022**

**\$150,000**

**Rutgers, The State University, Child Health Institute**

### Project Title & Summary:

***“Functional Evaluation of novel immunologically relevant receptor-ligand pairs identified via an unbiased protein interaction screen.”***

Immunotherapy, in particular antibodies that target ligand-receptor pairings that function as checkpoint inhibitors such as CTLA-4/B7 and PD1/PDL-1, has revolutionized the treatment of several different types of cancer. Blocking the negative regulation resulting from these pairings releases the immune system to directly attack and kill tumors. While many such ligand-receptor pairs have been identified, it is reasonable to believe that many more remain undiscovered. We used a new protein-protein interaction screen, to identify new ligand-receptor pairs that have the potential to regulate how the immune system responds to tumors. Our discoveries have the potential to advance our understanding of

## 2021 Bridge Grants and Recipients

### 2021 Bridge Grants and Recipients

the control of the immune response and provide novel targets for precision immunological approaches for curing cancer.

#### **Contact Information:**

**Derek Sant'Angelo**

[santandb@rwjms.rutgers.edu](mailto:santandb@rwjms.rutgers.edu)

**Dr. Raymond B. Birge, *Principal Investigator***

**Project Period 05/01/2021 – 4/30/2023**

**\$400,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“Targeting a phosphatidylserine/TAM receptor/PD-L1 axis as a vulnerability in cancer.”***

Over the past decade, immune-oncology and immunotherapy have emerged into front-line cancer therapeutics with clearly demonstrated clinical benefits to cancer patients.

Unlike classical chemotherapy, radiotherapy, and oncogene-directed inhibitors that suppress the growth of tumor cells, immune-therapeutics generally target negative regulatory immune checkpoints inhibitors (ICIs) that break tolerance and, when successful, promote immune-mediated tumor elimination by activating T cell effector functions. CTLA-4 and PD-1, for example, are two of the most promising immune checkpoint regulators that when inhibited affirmatively regulate T cell responses to tumor antigens presented and recognized via the T cell receptor (TCR). Therapeutic blocking antibodies to these pathways have had multiple indications approved by the FDA since 2011. However, it is also clear that the present utilization of ICI's represents only the “tip of the iceberg” for this therapeutic modality, and there is still much to be learned to optimize the clinical benefit of cancer immunotherapy. Indeed, ICI therapeutic responses are typically limited to 10-30% of patients, but when successful, responses in individual patients can have profound clinical outcomes even in individuals with advanced metastatic disease. In more recent years, there is great interest and ferment to combine certain checkpoint inhibitors empirically, identify reliable biomarkers to predict response rates to existing combinations, as well as expand and rationalize novel checkpoint regulators on non-T cell innate immune cell targets. Here we have characterized a novel inhibitory network in the tumor microenvironment involving constitutively elevated phosphatidylserine (PS), engagement of Mertk receptors on infiltrating macrophages, and subversion of host anti-tumor immunity. We intend to demonstrate that the PS- > Mertk-



# 2020 & 2021 Grants and Fellowships

>PD-L1 axis presents a vulnerability in cancer that can be mechanistically evaluated and therapeutically exploited.

## Contact Information:

**Dr. Raymond B. Birge**

[birgera@njms.rutgers.edu](mailto:birgera@njms.rutgers.edu)

## 2020 Pilot Grants

The purpose of the Pilot Grants is to provide seed funding for fundamentally sound research projects that address current priority areas related to:

- ❖ Health Disparities & Cancer
- ❖ Childhood Cancer
- ❖ Women's Health
- ❖ Psychosocial Effects of Cancer (e.g., determinants of health)
- ❖ Pain Management and
- ❖ Palliative Care.

Below is a project summary of the cancer research pilot grant recipients:

## 2020 Pilot Grants and Recipients

**Dr. Lauren Daniel, Ph.D.,** *Principal Investigator*

**01/01/2020 – 06/30/2022**

**\$50,000**

**Rutgers, The State University of New Jersey**

### Project Title & Summary:

***“Disrupted Sleep and its Association with Symptom Burden and Reduced Engagement in Supportive Care in Pediatric Stem Cell Transplant Patients.”***

Children with cancer undergoing hematopoietic stem cell transplants are in the hospital for several weeks in preparation for the procedure and awaiting recovery. During this time, sleep can be extremely disrupted by overnight vitals checks, medication administration, blood draws, and environmental noise and light. Sleep is closely related to the quality of life and physical recovery. Little research has examined the sleep of patients during transplants and whether environmental modifications could improve patients' nighttime sleep and next-day functioning. The current study will test whether protecting one 6-hour period for sleep each night by extending the time between vitals checks is a feasible and acceptable intervention, whether this change results in more sleep, and how extending vitals checks impacts the patient's quality of life and daytime functioning by measuring the frequency of participation in supportive care offered on the inpatient oncology unit (physical therapy, occupational therapy, school,

## 2020 Pilot Grants and Recipients

***The purpose of the Pilot Grants is to provide seed funding for fundamentally sound research projects that address current priority areas.***

### 2020 Pilot Grants and Recipients

child life services, and psychology). The study will include 40 patients, ages 8-21, admitted for hematopoietic stem cell transplant, following them from the day of transplant to 15 days after transplant. Patients will wear an actigraph (wrist-watch device that measures motion) for the duration of the study. Study data will provide preliminary evidence for extending vital checks to support implementing this change in clinical practice and testing this intervention in a larger trial across pediatric oncology.

#### Contact Information:

**Dr. Lauren Daniel**, [Ld526@camden.rutgers.edu](mailto:Ld526@camden.rutgers.edu)

**Dr. Adana A.M. Lianos**, *Principal Investigator*

**Project Period** 01/01/2020 – 12/31/2022

**\$50,000**

**Rutgers, School of Public Health**

#### Project Title & Summary:

***“HPV prevention and control in Newark, New Jersey.”***

Approximately 80 million people are currently infected and 14 million people are newly infected annually with human papillomavirus (HPV) in the United States (US). Of the more than 150 types of HPV identified to date, 13 of them are recognized as human carcinogens and are considered high-risk (HR-HPV) types for cervical cancer, while a set of others have unknown carcinogenic properties. Additionally, persistent HR-HPV infection accounts for a quarter of oropharyngeal cancers, 40-50% of penile cancers, 95% of anal cancers, and 90-100% of cervical cancers. Individuals with human immunodeficiency virus (HIV) are at higher risk for developing HPV-associated cancers (i.e. cervical, vaginal, vulvar, anal, oropharyngeal, penile, and rectal) due to both the biology of HIV infection and disparate healthcare delivery patterns in cancer prevention.

Infection rates of both HPV and HIV viruses are significantly higher among low-income, racial/ethnic minority subgroups, and other vulnerable populations. However, little population-based data exist on the utilization of and barriers/facilitators to HPV screening in the US, particularly for minority and medically underserved individuals, and groups who might be at increased risk for HPV infection. This study will address these gaps in knowledge, with a focus on populations in the Newark, New Jersey metropolitan area. The proposed study will directly address cancer health disparities and women’s health in New Jersey, two of the current priority areas described in the NJDOH-NJCCR funding opportunity. In addition, novel data will be generated among the LGBTQ+ population in Newark, specifically, men who have sex with men (MSM), who are most at risk for HIV, and inform strategies to increase HPV prevention and

## 2020 & 2021 Grants and Fellowships

screening both in New Jersey and nationally.

### Contact Information:

**Dr. Adana A.M. Lianos**, [Adana.Ilanos@rutgers.edu](mailto:Adana.Ilanos@rutgers.edu)

**Dr. Stacy N. Davis**, *Principal Investigator*

**Project Period** 01/01/2020 – 06/30/2022

**\$50,000**

**Rutgers, The State University of New Jersey**

### Project Title & Summary:

***“Exploration of Multilevel Factors That Influence Sustained Adherence to Colorectal Cancer Screening”***

Routine colorectal cancer (CRC) screening has contributed to reducing CRC-related incidence and mortality. Disparities persist among racial/ethnic minority and low socioeconomic (SES) patients that underutilize screening. Adherence to non-invasive screening options such as the fecal immunochemical test (FIT) can impact disparities. The goal of this research study is to understand how patient, clinician, and primary care practice level factors interact to influence sustained adherence to FIT. Discovering how these multilevel factors interact can lead to targeted screening strategies that reduce CRC disparities.

### Contact Information:

**Dr. Stacy Davis**, [Sd326@sph.rutgers.edu](mailto:Sd326@sph.rutgers.edu)

## 2021 Pilot Grants and Recipients

**Dr. Jyoti Malhotra**, *Principal Investigator*

**Project Period** 07/01/2021 – 06/30/2023

**\$50,000**

**Rutgers, The State University of New Jersey**

### Project Title & Summary:

***“A Pilot study of a home-based physical activity program in female lung cancer patients.”***

Lung cancer patients have significantly improved survival and outcomes with new therapeutic advances, especially immunotherapy. Patients with advanced lung cancer are treated with immunotherapy and may receive chemotherapy or radiation as well. Due to multiple factors such as toxicity from this treatment, reduced lung function from tumors and other medical problems such as bronchitis, patients have low exercise capacity and physical deconditioning. This in turn leads to more symptoms such as shortness of breath and fatigue as well as poor quality of life. To improve physical activity in patients who have completed therapy with immunotherapy for advanced lung cancer, we plan a

## 2020 Pilot Grants and Recipients

## 2021 Pilot Grants and Recipients

### 2021 Pilot Grants and Recipients

pilot study of home-based physical activity programs. Fifteen female patients will be enrolled and will receive home-based sessions with an exercise trainer via videoconferencing. We will also measure changes in symptom burden and quality of life with our intervention. The goal is to test the feasibility of this intervention so that we can plan a larger study on advanced lung cancer survivors treated with immunotherapy.

#### **Contact Information:**

**Jyoti Malhotra, [jm1940@cinj.rutgers.edu](mailto:jm1940@cinj.rutgers.edu)**

**Dr. Coral Omene, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“Evaluating the Gene Rearrangement Landscape and Response to Neoadjuvant Chemotherapy in Triple-Negative Breast Cancer and its Impact on Cancer Health Disparities”***

A significant number of women with early-stage breast cancer (BC) are treated with neoadjuvant chemotherapy given before surgery and have excellent survival outcomes if there is no residual breast cancer detected (pathological complete response, pCR) at the time of surgery. This is particularly true for triple-negative breast cancer (TNBC), an aggressive disease that is prevalent in African American (AA) women. Controversy exists in whether there are significant differences in responses to neoadjuvant chemotherapy with regard to race. While some studies have shown that AA women have a lower likelihood of PCR for triple-negative and HER2-positive BC compared to white women, others suggest that there is no difference. Whether this is due to biological differences, chemotherapy sensitivity to treatment or socioeconomic differences that could not be adjusted for is unknown. Obesity is well known to be more prevalent in AA women and there is an association with obesity and response to neoadjuvant chemotherapy and correlation with survival. Genomic alterations provide new prognostic biomarkers, enable the selection of patient groups that may most benefit from specific targeted agents, predicts their response to targeted therapy, and allows the investigation of acquired resistance mechanisms. Other genomic alterations, the relevance of fusions and rearrangements in breast cancer and its treatment have been less well described and this is particularly true for TNBC and even more so in African American women. Modifiable factors from these patients may be relevant to observed genomic changes such as obesity, a chronic inflammatory state, and a well-known factor in disparity outcomes for these patients.

This Pilot award will allow us to test the hypothesis that the gene rearrangement

landscape is different in African American women with triple-negative breast cancer in response to neoadjuvant chemotherapy.

**Contact Information:**

**Dr. Omene, [Co273@cinj.rutgers.edu](mailto:Co273@cinj.rutgers.edu)**

**Dr. Zhaomeng Niu, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“Understanding sun protection and skin examination practices among Hispanics.”***

Ethnic disparities exist in skin cancer, the most common cancer in the United States (US). In the past two decades, the incidence rate of melanoma, the deadliest form of skin cancer, among Hispanics has risen by 20% and mortality rates due to melanoma are higher in Hispanics compared to non-Hispanic whites. In general, Hispanics diagnosed with melanoma are younger, diagnosed at more advanced stages with thicker tumors, and have worse five-year melanoma-specific survival rates than non-Hispanic whites. Within the state of New Jersey (NJ), age-adjusted incidence rates of melanoma almost doubled from 1990 to 2005 and the incidence of melanoma in Hispanics also increased. Increases are especially prominent in several counties along the NJ shoreline. Ultraviolet radiation (UVR) is the leading cause of skin cancer. Sun protection can help prevent skin cancer by reducing exposure to UVR. Skin self-examination (SSE) is a technique for promoting early skin self-detection of melanoma. Evidence from previous studies indicates that SSE is an effective prevention tool and could decrease melanoma mortality greatly. Individuals who conduct SSE have been shown to find thinner and more treatable melanomas than those who do not check their skin. However, most of the skin cancer research has been focusing on the non-Hispanic white population, and health interventions that promote sun protection and skin self-examinations behaviors among Hispanics in NJ as well as the rest of the US are scant.

This research seeks to gather pilot data for developing a cost-efficient mobile-based and user-centered intervention to promote sun protection and skin self-examination among Hispanics. The data gathered from this project will support the resubmission of a K99/R00 grant application to the NIH by informing the development of a future randomized controlled trial that will evaluate the effectiveness of sun protection and skin self-examination for skin cancer prevention among Hispanics.

**Contact Information:**

**Dr. Zhaomeng Niu, [Zhaomeng.nju@rutgers.edu](mailto:Zhaomeng.nju@rutgers.edu)**

## 2021 Pilot Grants and Recipients

### 2021 Pilot Grants and Recipients

**Dr. David Shreiber, *Principal Investigator***

**Project Period 07/01/2021 -06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“Modeling initiating events in ovarian cancer metastasis to the peritoneum”***

Ovarian cancer is the deadliest gynecologic malignancy, with mortality rates near 70%. Ovarian cancer metastasis into the peritoneum and then other tissues of the abdomen is the primary driver of the high mortality rate. A key, first step in metastasis is the transition of ovarian cancer cells from an epithelial or sheet-like cell to a mesenchymal or tissue-like cell. Despite the importance of these epithelial-to-mesenchymal transitions (EMT), they are poorly understood. The ovarian tumor environment is dynamic and complex. One aspect of the environment that is now recognized to contribute significantly to tumor cell behavior and metastasis is mechanics. Forces from cells interacting directly with other cells and tissue and from pressure on the tumor as it grows against or within a stiff tissue are transduced into signals to the cells to change their behavior, including changes that promote escape from the solid tumor and invasion into the peritoneum. The goal of this proposal is to develop a model system to study ovarian cancer EMT and metastasis that captures key mechanical features that may regulate these behaviors.

The chief tool we will use to develop this system is collagen methacrylamide (CMA). CMA is type-I collagen that we modified to allow us to tailor its mechanical properties using ultraviolet light. The goal of this pilot proposal is to employ CMA to develop a model that presents small tumor-like clusters of cells called spheroids with a defined mechanoregulatory environment. We propose to use the model to examine shifts in ovarian cancer cell behavior that are consistent with EMT and to relate those shifts to the properties of the surrounding collagen matrix. We believe the studies in this pilot proposal will accelerate the development of this model system and demonstrate its potential to study ovarian cancer EMT and metastasis. We will then be well-positioned for major federal awards to study mechanistic aspects of EMT and therapeutic interventions in a well-defined and physiologically relevant in vitro model.

**Contact Information:**

**Dr. David Shreiber, [shreiber@soe.rutgers.edu](mailto:shreiber@soe.rutgers.edu)**



#### 2020 Predoctoral Fellowships and Recipients

**Caleb LoSchiavo**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

*“Human papillomavirus prevention, screening, knowledge, and risk among transgender individuals in New Jersey: Implications for cancer prevention in high-risk populations and underserved communities.*

**Contact Information:**

**Caleb LoSchiavo, MPH**, [cel129@sph.rutgers.edu](mailto:cel129@sph.rutgers.edu)

**Jeffrey Yang**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

*“Structural optimization and biological evaluation of novel small molecule inhibitors of the PD-1/PD-L1 protein-protein interaction*

**Contact Information:**

**Jeffrey Yang**, [jy330@pharmacy.rutgers.edu](mailto:jy330@pharmacy.rutgers.edu)

**Sukanya Panja**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

*“Computational analysis of molecular crosstalk in therapeutic response to anti-androgens in prostate cancer”*

**Contact Information:**

**Sukanya Panja**, [sp1388@shp.rutgers.edu](mailto:sp1388@shp.rutgers.edu)

### 2020 Predoctoral Fellowships

**Victor M. Tan**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Application of Rutgers CRISPR Base Editing Technology to Increase Bone Marrow Matching for Treatment of Leukemia”*

**Contact Information:**

**Victor M. Tan**, [vt187@scarletmail.rutgers.edu](mailto:vt187@scarletmail.rutgers.edu)

**Alejandra I. Ferrer**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Mesenchymal stem cell-induced epigenetic changes in breast cancer cells to facilitate dormancy in bone marrow”*

**Contact Information:**

**Alejandra I. Ferrer**, [aif25@gsbs.rutgers.edu](mailto:aif25@gsbs.rutgers.edu)

**Mai-Uyen Nguyen**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Functions of KAT2A and KAT2B in mediating histone post-translational modifications in colon cancer”*

**Contact Information:**

**Mai-Uyen Nguyen**, [mtn59@scarletmail.rutgers.edu](mailto:mtn59@scarletmail.rutgers.edu)

**Yanira Gonzalez-Rodriguez**, *Principal Investigator*

*Project Period 01/01/2020 – 06/30/2022*

**\$50,000**

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Regulation of DNA Repair and Cell Cycle Checkpoints by BRCA1 and TOPBP1”*

**Contact Information:**

**Yanira Gonzalez-Rodriguez**, [yariragonzalez1@rutgers.edu](mailto:yariragonzalez1@rutgers.edu)

## 2020 & 2021 Grants and Fellowships

### 2020 Predoctoral Fellowships

**Christen Khella, Principal Investigator**

**Project Period: 01/01/2020 – 06/30/2022**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

**“HCK is a novel oncogenic driver of tumorigenesis in poor-prognostic high grade serious ovarian cancer”**

**Contact Information:**

**Christen Khella, [cak241@gsbs.rutgers.edu](mailto:cak241@gsbs.rutgers.edu)**

**Jay V. Shah, Principal Investigator**

**Project Period: 01/01/2020 – 06/30/2022**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

**“Optical Immune Indexing based on Short Wave Infrared Emitting Nanoprobes for Evaluating Checkpoint Immunotherapy”**

**Contact Information:**

**Jay V. Shah, [jvshah93@gmail.com](mailto:jvshah93@gmail.com)**

**Rahul Upadhyia, Principal Investigator**

**Project Period: 01/01/2020 – 06/30/2022**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

**“Drug Discovery of Polymer-Peptide Conjugates for Use in Cancer Therapy”**

**Contact Information:**

**Rahul Upadhyia, [rvu4@scarletmail.rutgers.edu](mailto:rvu4@scarletmail.rutgers.edu)**

**Ayse Nihan Kilinc, Ph.D., Principal Investigator**

**Project Period: 01/01/2020 – 06/30/2022**

**\$100,000**

**Princeton University**

**Project Title & Summary:**

**“Effects of matrix stiffness on cancer cell plasticity”**

**Contact Information:**

**Ayse Nihan Kilinc, Ph.D., [akilinc@princeton.edu](mailto:akilinc@princeton.edu)**

### 2020 Predoctoral Fellowships

**Yong Tang, Ph.D., Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

*\$100,000*

*Princeton University*

**Project Title & Summary:**

*“The role of Metadherin (MTDH) in suppressing immune response to metastatic breast cancer”*

**Contact Information:**

**Yong Tang, Ph.D.,** [yongt@princeton.edu](mailto:yongt@princeton.edu)

**Neelam Oswal, Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

*\$100,000*

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Targeting a master regulator transcription factor in T cell lymphomas”*

**Contact Information:**

**Neelam Oswal, Ph.D.,** [nl63@rwjms.rutgers.edu](mailto:nl63@rwjms.rutgers.edu)

**Chun-Yuan Chang Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

*\$100,000*

*The Cancer Institute of New Jersey*

**Project Title & Summary:**

*“The role of mutant p53 accumulation and Gain of Function in colorectal cancer”*

**Contact Information:**

**Chun-Yuan Chang, Ph.D.,** [cc1747@cinj.rutgers.edu](mailto:cc1747@cinj.rutgers.edu)

**Trishnee Bhurosy Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

*\$100,000*

*The Cancer Institute of New Jersey*

**Project Title & Summary:**

*“Colorectal cancer survivors’ knowledge, beliefs and practices towards using iron supplementation”*

**Contact Information:**

**Trishnee Bhurosy, Ph.D.,** [tbhurosy@indiana.edu](mailto:tbhurosy@indiana.edu)

## 2020 & 2021 Grants and Fellowships

### 2020 Predoctoral Fellowships

**Jinho Yoon, Ph.D.,** *Principal Investigator*

**Project Period:** 01/01/2020 – 06/30/2022

**\$100,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

**“Dual PSA detecting LFA biosensor based on UCNPs and electrochemical technique for accurate prostate cancer diagnosis”**

**Contact Information:**

**Jinho Yoon, Ph.D.,** [jy643@scarletmail.rutgers.edu](mailto:jy643@scarletmail.rutgers.edu)

**Dr. Mei-Heng Lin, Principal Investigator**

**Project Period** 01/01/2020 – 06/30/2022

**\$100,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

**“Deconstructing the effects of chemotherapy-induced toxicity on cognitive deficits in survivors of childhood non-central nervous system (CNS) solid tumors.”**

**Contact Information:**

**Dr. Mei-Heng Lin,** [Meiheng.lin@rutgers.edu](mailto:Meiheng.lin@rutgers.edu)

**Hong Zhang, Ph.D., Principal Investigator**

**Project Period:** 01/01/2020 – 06/30/2022

**\$100,000**

**The Cancer Institute of New Jersey**

**Project Title & Summary:**

**“Mechanism and Significance of Nuclear mTOR-NEAT1 Signaling in Hepatocellular Carcinomas”**

**Contact Information:**

**Hong Zhang, Ph.D.,** [hz285@cinj.rutgers.edu](mailto:hz285@cinj.rutgers.edu)

### 2020 Predoctoral Fellowships

**Zhihua Kang, Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

**\$100,000**

*The Cancer Institute of New Jersey*

**Project Title & Summary:**

*“Exploring the role of BRCA2-MCM10 interaction in DNA replication and tumorigenesis after DNA damage”*

**Contact Information:**

**Zhihua Kang, Ph.D.,** [zk87@cinj.rutgers.edu](mailto:zk87@cinj.rutgers.edu)

**Luca Tattone, Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

**\$100,000**

*The Cancer Institute of New Jersey*

**Project Title & Summary:**

*“The role of a tumor suppressor enhancer of PTEN in T-ALL”*

**Contact Information:**

**Luca Tattone, Ph.D.,** [lt452@cinj.rutgers.edu](mailto:lt452@cinj.rutgers.edu)

**Benjamin Bates, M.D., Ph.D.,** *Principal Investigator*

*Project Period: 01/01/2020 – 06/30/2022*

**\$100,000**

*Rutgers, The State University of New Jersey*

**Project Title & Summary:**

*“Air Pollution, Cancer Prognosis, and Effectiveness of Chemo- and Hormone Therapy in Patients with Breast Cancer”*

**Contact Information:**

**Benjamin Bates, M.D., Ph.D.,** [bab312@rwjms.rutgers.edu](mailto:bab312@rwjms.rutgers.edu)



### 2021 Predoctoral Fellowships

**Dr. Emily DiMartini**, *Principal Investigator*

**Project Period** 07/01/2021 – 06/30/2023

**\$50,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“A clickable drug targeting system for ovarian cancer.”***

Free radicals contribute to the development and spread of ovarian cancer, and elevated levels of free radicals are present in nearly all types of cancer. We have hypothesized that these radicals can induce a healthy therapeutic molecule. If successful, this approach will improve cancer treatment by localizing and sustaining the presence of healthy molecules at the tumor site.

#### **Project Contact**

**Dr. Emily DiMartini**, [Emily.dimartini@rutgers.edu](mailto:Emily.dimartini@rutgers.edu)

**Dr. Svetlana Bagdasarov**, *Principal Investigator*

**Project Period** 07/01/2021 – 06/30/2023

**\$50,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***Ligand-directed alpha-galactosyltransferase gene therapy using hybrid AAV phage vector for antitumor immune response.”***

Cancer immunotherapy is a treatment that involves a patient's immune system to fight cancer. The immune system protects the body from infections and other diseases including cancer by attacking any new substance that is not normally found in the body. When normal cells become cancerous, they are altered and can produce certain proteins that the immune system does not recognize. This research project focuses on modifying a virus to infect only cancer cells that improve immune recognition and elimination of cancer cells.

#### **Project Contact**

**Svetlana Bagdasarov**, [Sb1709@rwjms.rutgers.edu](mailto:Sb1709@rwjms.rutgers.edu)

### 2021 Predoctoral Fellowships

**Dr. Maria Ibrahim, Ph.D. Candidate, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/20223**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“Investigating the impact of autophagy deficiency on the tumor microenvironment.”***

This study aims to understand the mechanisms by which autophagy deficiency impacts the tumor microenvironment. Lung cancer is a deadly disease and one of the leading causes of death worldwide and thus needs new therapeutic approaches. This research project examines the mechanisms that lead to impaired tumor growth.

**Project Contact**

**Maria Ibrahim, [mi249@gsbs.rutgers.edu](mailto:mi249@gsbs.rutgers.edu)**

**Paul Kraycer, Ph.D. Candidate, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“The Role of Sliding in Cohesin Accumulation and Function on Chromosomes.”***

Hypothesize that redistribution of cohesion by sliding is a universal process that moves the complex to critical sites of action and away from harmful locations on chromosomes. Dysfunction of cohesion, a protein complex that controls chromosome structure and function, has been linked to some forms of cancer. To appreciate cohesin’s role in cancers, it is necessary to first understand its normal roles in chromosome biology. This research aims to reveal how cohesion accumulates and functions at key chromosomal sites.

**Project Contact**

**Paul Kraycer, [Paul.m.kraycer@rutgers.edu](mailto:Paul.m.kraycer@rutgers.edu)**

## 2020 & 2021 Grants and Fellowships

### 2021 Predoctoral Fellowships

**Dr. Emily DiMartini, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“A clickable drug targeting system for ovarian cancer.”***

Free radicals contribute to the development and spread of ovarian cancer, and elevated levels of free radicals are present in nearly all types of cancer. We have hypothesized that these radicals can induce a healthy therapeutic molecule. If successful, this approach will improve cancer treatment by localizing and sustaining the presence of healthy molecules at the tumor site.

**Project Contact**

**Dr. Emily DiMartini, [Emily.dimartini@rutgers.edu](mailto:Emily.dimartini@rutgers.edu)**

**Sun Han, *Graduate Researcher, Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, the State University of New Jersey**

**Project Title & Summary:**

***“Novel insights into the interplay between viral Rta and host Notch to regulate lytic reactivation of Kaposi’s sarcoma-associated herpesvirus.”***

Kaposi’s sarcoma (KS) is the most common cancer in HIV-infected individuals and its tumor progression is dependent on the lytic reactivation of its etiologic agent – Kaposi’s sarcoma-associated herpesvirus (KSHV). Thus, by understanding how Rta and Notch function with RBP-Jk in KSHV reactivation, we can learn more of the non-canonical Notch mechanisms underlying pathogenesis in various cancers, while potentially identifying other participating novel host components.

**Project Contact**

**Sun Murray Han, Ph.D. Candidate, [Smh364@gsbs.rutgers.edu](mailto:Smh364@gsbs.rutgers.edu)**

## 2021 Predoctoral Fellowships

**Molly Brennan, Ph.D. Candidate, *Principal Investigator***

**Project Period 07/01/2021 – 06/30/2023**

**\$50,000**

***The Trustees of Princeton University***

### **Project Title & Summary:**

***“The effects of intratumoral heterogeneity in triple-negative breast cancer on metastasis and chemotherapeutic response.”***

One in eight women will be affected by breast cancer at some point in their lives. Approximately 15-20% of these women will be diagnosed with triple-negative breast cancer (TNBC), which is characterized by the absence of three specific receptors in the cancer cells. TNBC is notoriously difficult to treat, and patients often have a lower overall survival rate compared to patients with other types of breast cancer. This study examines several models that could potentially be used to test chemotherapies from patient samples before they are delivered to patients thus leading to improved outcomes.

### **Project Contact**

**Molly Brennan, [mollycb@princeton.edu](mailto:mollycb@princeton.edu)**

**Rebecca Risan, Graduate, *Principal Investigator***

**Project Period: 07/01/2021 – 06/30/2023**

**\$50,000**

***Rutgers, The State University, Biomedical Engineering***

### **Project Title & Summary:**

***“Systematic examination of the mechanisms of cancer associated thrombosis.”***

Pancreatic cancer is one of the leading causes of cancer-related death with a 5-year prognosis of 5-10%. Contributing to this high rate of morbidity and mortality is the fact that pancreatic cancer also has the highest prevalence of all cancers of venous thromboembolism (VTE), which is the second leading cause of death in cancer patients. Our proposed research will explore these mechanisms using a high-throughput assay and structural studies to analyze different combinations the main four factors involved in the blood clotting process that are over- or under- expressed in pancreatic cancer plasma. Likewise, the development of a mathematical model of cancer-related thrombosis and fibrinolysis could predict the response to chemotherapy to choose the optimal treatment for thrombosis.

### **Project Contact**

**Rebecca Risan, [Rr901@scarletmail.rutgers.edu](mailto:Rr901@scarletmail.rutgers.edu)**

## 2020 & 2021 Grants and Fellowships

**Henry, Rukia Graduate Research Fellow, *Principal Investigator***

**Project Period: 07/01/2021 – 06/30/2023**

**\$50,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“Elucidating the Role of LYN Src Kinase in DNA Repair.”***

Our DNA is subjected to daily stressors that may induce damage in the form of single and double-stranded breaks. An important DNA repair protein (PARP) is essential in the signaling and recruitment of proteins involved in the DNA damage response. Consequently, as a regulator of PARP and ATM during DNA repair, targeting LYN could prove to be beneficial

**Project Contact**

**Rukia Henry, [Rukia.henry@rutgers.edu](mailto:Rukia.henry@rutgers.edu)**

### 2021 Postdoctoral Fellowships

**Patricia Renck Nunes, *Principal Investigator***

**Project Period: 07/01/2021 – 06/30/2023**

**\$100,000**

**Rutgers, The State University of New Jersey**

**Project Title & Summary:**

***“ACLY as a novel therapeutic target in T-cell leukemia.”***

T-lineage acute lymphoblastic leukemia (T-ALL) is an aggressive hematologic malignancy driven by a gene called NOTCH1. Despite recent progress in clinical outcomes in this disease, 25% of children and over 50% of adult T-ALL cases show primary resistant leukemia or respond only transiently to chemotherapy, and ultimately succumb to their disease, highlighting the need to discover novel and improved therapeutic targets. Our preliminary data point to the fact that ACLY (an enzyme involved in the control of both metabolism and gene expression) could play a key but previously unrecognized role in this disease. The results from this project could directly translate into improved treatments for T-ALL patients in the short-term.

**Project Contact**

**Patricia Renck Nunes, [Pr476@cinj.rutgers.edu](mailto:Pr476@cinj.rutgers.edu)**

2021  
Predoctoral  
Fellowships

2021  
Postdoctoral  
Fellowships

### 2021 Postdoctoral Fellowships

**Gary Kwok, Ph.D., Principal Investigator**

**Project Period 07/01/2021 – 06/30/2023**

**\$100,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“Understanding the multilevel factors influencing a mindfulness-based mobile application service implementation for adolescents and young adults with cancer”***

This study will use a theory-based, exploratory sequential mixed-methods approach to identify key barriers and facilitators in the uptake of a mindfulness-based mobile application service for adolescents and young adult (AYA) survivors of childhood cancer.

There are over 678,000 childhood cancer survivors in the United States. Significant progress in treatments for childhood cancer has resulted in an increase of the survival rate. Unfortunately, survivors are at risk for significant medical and psychosocial late effects from treatment such as secondary malignancies (cancers caused by treatment) and anxiety (for recurrence). The findings of the study will be used to identify appropriate strategies to incorporate mindfulness meditation mobile app into clinical care for with AYA survivors of childhood cancer

#### **Project Contact**

**Gary Kwok, Ph.D., [Gkk28@cinj.rutgers.edu](mailto:Gkk28@cinj.rutgers.edu)**

**Sai Zhang, Ph.D., Principal Investigator**

**Project Period 07/01/2021 – 06/30/2023**

**\$100,000**

**Rutgers, The State University of New Jersey**

#### **Project Title & Summary:**

***“Uncovering the shared T cell specificities in lung cancer patients for the development of novel T cell receptor-engineered T cell therapy”***

Lung cancer is the leading cause of cancer-related deaths in the United States, with non-small cell lung cancer (NSCLC) being the most common form of this cancer type. NSCLC patients with advanced disease have an extremely low 5-year survival rate of around 6%. Immune checkpoint blockade (ICB) is a therapeutic regimen that blocks the “off signal” sent to T cells, leading to enhanced anti-tumor activity. The proposed study aims to establish a comprehensive framework of T cell specificity landscape using the T cell receptor sequences and HLA genotypes from lung cancer patients who receive the

treatment of immune checkpoint blockade in order to facilitate the prioritization of candidate T cell clones and their application in adoptive T cell therapy.

### **Project Contact**

**Sai Zhang, Ph.D.,** [sz223@rutgers.edu](mailto:sz223@rutgers.edu)

**Shaimaa Hussein, Ph.D.,** *Principal Investigator*

**Project Period:** 07/01/2021—6/30/2023

**\$100,000**

**Rutgers, The State University of New Jersey,  
Cancer Institute of New Jersey**

### **Project Title & Summary:**

***“Identifying the role of CPT1A and Fatty acid oxidation in endocrine therapy resistance in ER+ Breast Cancer”***

Breast cancer is the most commonly diagnosed and second leading cause of cancer-related deaths in women in the United States. Hormone receptors positive (HR+) breast tumors account for approximately 70% of the nearly 270,000 diagnosed breast cancer cases each year. Since these tumors are dependent on estrogen signaling for tumor growth, most patients are successfully treated with endocrine-based therapies (ET) that block this signaling. Unfortunately, between 30% and 50% of HR+ tumors are resistant or will develop resistance to these treatments. Should our hypothesis be correct, we anticipate that the proposed studies will begin to delineate the role of CPT1A and FAO in endocrine therapy resistance and provide preclinical data to support the potential impact of FAO inhibitors as a therapeutic option for the treatment of HR+ breast tumors.

### **Project Contact**

**Shaimaa Hussein, Ph.D.,** [Sh1463@cinj.rutgers.edu](mailto:Sh1463@cinj.rutgers.edu)

**Xue Yang, Ph.D.,** *Principal Investigator*

**Project Period:** 07/01/2021—6/30/2023

**\$100,000**

**Rutgers, The State University of New Jersey**

### **Project Title & Summary:**

***“Tumor suppressor p53 regulates innate immunity”***

Tumor suppressor p53 plays a key role in preventing tumor development. p53 is the most frequently mutated gene in human cancers and is observed in ~25-30% of breast cancers and in over 80% of triple-negative breast cancers (TNBCs). These p53 mutations often lead to the production of mutant p53 proteins in cancers that not only lose the tumor-suppressive function, but also gain new

## 2021 Postdoctoral Fellowships



## 2021 Postdoctoral Fellowships

activities to promote cancer growth and metastasis. Currently, the role and mechanism of mutant p53 in breast cancers are poorly defined, which hinders the development of effective strategies to treat breast cancers with mutant p53. This proposed study is to identify the role and molecular mechanism of mutant p53 in breast cancer growth and metastasis. Most importantly, this study will test whether blocking FAO can be an effective therapeutic strategy for breast cancers carrying mutant p53.

### **Project Contact**

**Xue Yang, Ph.D., [Xy263@cinj.rutgers.edu](mailto:Xy263@cinj.rutgers.edu)**

**Dr. Fawzi, Alogaili Ph.D., *Principal Investigator***

**Project Period: 07/01/2021 – 06/30/2023**

**\$100,000**

**Rutgers, The State University of New Jersey, Cancer Institute of New Jersey**

### **Project Title & Summary:**

***“The role of ketogenic diet in KRAS-mutant lung tumorigenesis”***

Lung cancer remains one of the leading causes of cancer-related death, with non-small cell lung cancer (NSCLC) representing the majority of cases. KRAS is the most common oncogenic driver in NSCLC, confers a poor prognosis, is resistant to therapy, and is undruggable so far. Thus, understanding how the genetic makeup determines the response of different subtypes of KRAS-driven lung tumors to a ketogenic diet is critical to providing strategies for using ketogenic diet as an adjuvant for cancer therapy. Here, we will determine the underlying mechanism by which the ketogenic diet modulates tumor and host metabolism to cause distinct responses in the development of KL and KP lung tumors. We will also explore if the ketogenic diet can act as an adjuvant in the treatment of KRAS-driven lung cancer.

### **Project Contact**

**Fawzi Alogaili, Ph.D., [fa421@cinj.rutgers.edu](mailto:fa421@cinj.rutgers.edu)**

**Tianling Zhang, Ph.D., *Principal Investigator***

**Project Period: 07/01/2021 – 06/30/2023**

**\$100,000**

**The Rutgers Cancer Institute of New Jersey**

### **Project Title & Summary:**

***“Chronic stress and cancer”***

Breast cancer is the most frequently diagnosed cancer and the second leading cause of cancer death among women in the United States. A better

understanding of the molecular mechanism of breast cancer will lead to the development of more effective strategies for breast cancer treatment. Epidemiological studies have strongly suggested that chronic stress, including long-time isolation (e.g. isolation caused by COVID-19), depression, or lack of social support, greatly promotes the onset, progression, and mortality of various types of cancers, including breast cancer. The goal of this proposed study is to establish the role of chronic stress in breast cancers carrying mutant p53, reveal its underlying mechanism, and test potential therapeutic strategies.

### **Project Contact**

**Dr. Tianling Zhang**, [Tz191@cinj.rutgers.edu](mailto:Tz191@cinj.rutgers.edu)

**Saber Amin, Ph.D.**, *Principal Investigator*

**Project Period: 07/01/2021 – 06/30/2023**

**\$100,000**

**Rutgers, The State University of New Jersey**

### **Project Title & Summary:**

***“Neoadjuvant chemotherapy in ovarian cancer: Racial disparities in use and survival outcomes”***

Non-Hispanic black women with ovarian cancer experience 41% higher mortality compared to non-Hispanic white women after accounting for age and stage. The causes of these disparities are likely to be multi-factorial and include access to care, grade at diagnosis, and adherence to treatment. However little is known about the racial difference in the use of neoadjuvant chemotherapy (NACT) plus interval debulking surgery vs primary debulking surgery plus NACT, and how this potential difference may explain the persistent racial differences in survival. This study will examine the racial differences in these treatments and determine how they contribute to racial/ethnic differences in ovarian cancer survival.

### **Project Contact**

**Saber Amin, Ph.D.**, [saber.ali.amin@rutgers.edu](mailto:saber.ali.amin@rutgers.edu)

### Current Commission Members

**T**he NJCCR consists of dedicated volunteer members that are involved, both statewide and nationally in the field of cancer.

#### **Dr. Kenneth Adler**

##### ***Chair***

Dr. Adler specializes in Hematology/Oncology, with a special interest in benign and malignant Hematology and in Geriatric Oncology. In addition to his role at Summit Medical Group, he is an Assistant Clinical Professor of Medicine at the New Jersey Medical School. He is the Co-Chair of the American Society of Hematology practice and partnership and is a Fellow of the American College of Physicians, a member of the American Society of Clinical Oncology and the American Society of Hematology. Dr. Adler has been awarded several outstanding honors throughout his career, including most recently in 2014 he received the prestigious August Stone Award for his volunteer service to Morristown Medical Center, and in 2017 he was the Medical Honoree of the American Cancer Society for Northwest New Jersey.

#### **Dr. Kathleen Scotto**

##### ***Vice-Chair***

Dr. Scotto is currently Vice-Chancellor for research and research training, Rutgers Biomedical and Health Sciences and Vice-Dean for the School of Graduate Studies, Rutgers the State University of New Jersey. She received her Ph.D. from the Cornell Graduate School of Medical Sciences. Before joining Rutgers, she served as an Associate Professor of Molecular Pharmacology and Experimental Therapeutics at Memorial Sloan Kettering Cancer Center and a Professor with tenure at the Fox Chase Cancer Center. In addition to her administrative roles, Dr. Scotto maintains an active laboratory at Rutgers, studying the role of ABC Transporters in tumor survival and treatment response.

#### **Dr. Shawna Hudson**

Dr. Hudson is Professor and Research Division Chief in the Department of Family Medicine and Community Health and founding director of the Center Advancing Research and Evaluation for Patient-Centered Care (CARE-PC) at the Rutgers Robert Wood Johnson Medical School. A medical sociologist, she is a full research member of the Rutgers Cancer Institute of New Jersey in the Cancer Prevention and Control Program, and also has a secondary faculty appointment in the Rutgers School of Public Health in the Department of Social and Behavioral Health Sciences. She serves as Director for the Community Engagement Core of the NJ Alliance for Clinical and Translational Science (NJ ACTS) which is a Clinical and Translational Science Award (CTSA) consortium between Rutgers University, Princeton University and the New Jersey Institute of Technology. Dr.

## Current Commission Members

Hudson is internationally known for her NIH-funded research that examines long-term follow-up care for cancer survivors and their transitions from specialist to primary care and has authored and coauthored numerous research papers and book chapters. In 2018, she received the Excellence in Research Award from the NJ Health Foundation and was named to the American Society of Clinical Oncology Cancer Survivorship Committee.

### Dr. Wendy Budin

Dr. Wendy Budin is Professor and Associate Dean for the entry to baccalaureate practice at Rutgers School of Nursing. Previously, she was the Director of Nursing Research at NYU Langone Medical Center and Faculty at NYU College of Nursing. Dr. Budin is involved in an ongoing program of research on psychosocial adjustment to breast cancer. In 2019, she co-authored a book chapter entitled “Theoretical Frameworks and Philosophies of Care,” in *Current Trends in Oncology Nursing*- second edition. Dr. Budin is a Fellow in the American Academy of Nursing and the New York Academy of Medicine (NYAM). For her achievements, she received the NJ Governor’s Award for Nursing Research and Distinguished Alumnae Awards from the NYU College of Nursing and Seton Hall University, and in 2018, she received the March of Dimes, Nurse of the Year Award for Research.

### Dr. Generosa Grana

Dr. Grana is the Director of the MD Anderson Cancer Center at Cooper. She is also a Professor of Medicine at Cooper Medical School of Rowan University and an Adjunct Professor of Cancer Medicine at the University of Texas MD Anderson Cancer Center. Dr. Grana completed her fellowship in Hematology and Oncology at Fox Chase Cancer Center and Temple University in Philadelphia where she also completed a post-doctoral fellowship in Preventive Oncology. Dr. Grana’s clinical and research endeavors at Cooper have focused on breast cancer, cancer genetics, and community outreach interventions aimed at underserved populations. She has received numerous awards including the American Cancer Society Silver Chalice Award and the Susan G. Komen For The Cure “Light of Life” Award.

### Dr. Li Li

Dr. Li is currently Executive Director at the Novartis Institute for Biomedical Research where he has worked for over 16 years. He received his Ph.D. in Toxicology from the University of Texas-Houston School of Public Health. He is a Member of the Society of Toxicology and a Board-Certified Toxicologist. He is a recipient of numerous awards, most recently the Team Innovation Award from Novartis. In addition, he has co-authored many articles on toxicology innovation in research journals.

## Current Commission Members

***The NJCCR consists of dedicated volunteer members that are involved, both statewide and nationally in the field of cancer.***

### Current Commission Members

#### **Loletha C. Johnson, MSN, RN**

Loletha Johnson is a public health practitioner with the New Jersey Department of Health, Division of Community Health Services and oversees the NJ Cancer Education and Early Detection Program (NJCEED) and Office of Cancer Control and Prevention (OCCP). She has an eclectic array of experience working with priority populations to address the most salient health outcomes and health disparities across the life course. Her forward-thinking has led to innovative interventions to reduce mortality and morbidity in at-risk populations across multiple disease states. She has been instrumental in data-driven environmental systems, and policy initiatives that impact access to health service through addressing social determinants of health barriers to care with multisectoral collaboration, as both a collaborator and program administrator.

#### **Dr. Mingzhou Fang**

Dr. Fang is a Research Scientist in the Bureau of Risk Analysis of the Division of Science and Research in the NJ Department of Environmental Protection. She has two years of experience in managing, supervising, and conducting risk assessment of environmental contaminants and providing technical support to toxicology, risk assessment, and environmental health-related projects for various departmental programs in the New Jersey Department of Environmental Protection. In addition, she has over ten years of research and teaching experience in Toxicology, Risk Assessment, and Environmental Health as an Assistant Professor at Rutgers, The State University of New Jersey.

### **Dr. Anna Marie Skalka** **(Chair Emerita)**

Dr. Anna Marie (Ann) Skalka is Professor Emerita and former W.W. Smith Chair of Cancer Research at the Institute for Cancer Research at the Fox Chase Cancer Center in Philadelphia, where she served as Sr. Vice-President for Basic Science from 1987 until 2008. She received a Ph.D. degree in Microbiology from New York University Medical School. Recognized internationally for her research on viruses and cancer, she is the author of 240 peer reviewed research articles, books and scholarly reviews. Dr. Skalka has also been deeply involved in state, national, and international advisory groups concerned with the broader, societal implications of scientific research. In recognition of her many accomplishments, she has been honored by election to the Board of Governors of the American Academy of Microbiology, the New York Academy of Science, the American Association for the Advancement of Science, and the American Academy of Arts and Science.

## Current Commission Members



# **New Jersey Commission On Cancer Research**

## **5TH ANNUAL VIRTUAL CANCER RESEARCH SYMPOSIUM**

November 10, 2021

Program Book



### AGENDA AT-A-GLANCE

8:45 am	<b>Welcome and Introductions</b> Dr. Kenneth Adler, Chair NJCCR, Summit Medical Group
9:00 am	<b>Keynote Address</b>  <i>Cancer Survivorship Healthcare Delivery: Challenges and Opportunities for Implementation Science and Intervention Research</i>  Shawna Hudson, PhD, Professor, Henry Rutgers Chair and Research Division Chief, Family Medicine and Community Health Rutgers Robert Wood Johnson Medical School
9:30 am	<b>Awards Presentation</b> Legislative Champion Award: Senator Anthony M. Bucco (NJ-25) Patient Advocate Award: Ellen Brody Decker Dr. Jonathan Yavelow Mentor Award: Dr. Raymond Birge
10:00 am	<b>Research Presentations - Select your track</b> Zoom Room 1 - Led by Dr. Generosa Grana Zoom Room 2 - Led by Dr. Wendy Budin
11:00 am	<b>Employment Panel: Trends in 2021 and Beyond</b> <ul style="list-style-type: none"><li>• DR. MICHELE DONATO, HACKENSACK UNIVERSITY MEDICAL CENTER (MODERATOR)</li><li>• DR. BRITTANY ADAMSON, PRINCETON UNIVERSITY</li><li>• MARTIN REXROAD, PTC THERAPEUTICS</li><li>• ASSEMBLYMAN ANDREW ZWICKER (NJ-16)</li></ul>
11:45 am	<b>Closing Remarks</b> Dr. Adler, Chair NJCCR, Summit Medical Group

\*\*\* THIS SECTION IS CURRENT THROUGH NEW JERSEY 214TH LEGISLATURE \*\*\*  
2ND ANNUAL SESSION (P.L. 2011 CHAPTER 51 AND JR 3)  
STATE CONSTITUTION CURRENT THROUGH THE NOVEMBER, 2010 ELECTION  
ANNOTATIONS CURRENT THROUGH MAY 5, 2011.

TITLE 52. STATE GOVERNMENT, DEPARTMENTS AND OFFICERS  
SUBTITLE 1. GENERAL PROVISIONS  
CHAPTER 9U. CANCER RESEARCH ACT

GO TO THE NEW JERSEY ANNOTATED STATUTES ARCHIVE DIRECTORY

*N.J. Stat. § 52:9U-1 (2011)*

§ 52:9U-1. Short title

This act shall be known and may be cited as the "Cancer Research Act."

**HISTORY:** L. 1983, c. 6, 1, eff. Jan. 17, 1983.

**NOTES:**

Cross References:

Legislative appropriations; breast cancer research project defined, see *54A:9-25.8*.

Appropriation of monies deposited, see *54A:9-25.22*.

§ 52:9U-2. Legislative findings and declarations

The Legislature finds and declares that, although this State has the highest cancer death rate in the nation for many of the most frequently fatal types of cancer, it has provided relatively little encouragement for cancer studies at any of its local institutions involved in basic biological research; and that this failure has made New Jersey unattractive for the recruitment of highly skilled cancer investigators, has reduced the State's capacity to compete for its fair share of federal and private research dollars, and has been responsible for delaying the development of services and facilities necessary to conduct productive research. New Jersey's failure to make a concerted and intense effort in the war against cancer has deprived its citizens of the benefits resulting from the latest advances in basic cancer research.

The Legislature further finds that the State can ill afford to continue its present policy in this regard. Corrective measures should be adopted promptly and funded adequately to make up for lost ground and to make the State competitive in the area of cancer research within the next 5 years.

**HISTORY:** L. 1983, c. 6, 2, eff. Jan. 17, 1983.

§ 52:9U-3. Definitions

As used in this act:

a. "Approved research project" means a scientific research project, which is approved by the commission and which focuses on the genetic, biochemical, viral, microbiological and environmental causes of cancer, and may include, but is not limited to, behavioral, socio-economic, demographic and psychosocial research or research into methods of clinical treatment; or which focuses on pain management and palliative care for persons diagnosed with cancer.

b. "Commission" means the New Jersey State Commission on Cancer Research established pursuant to this act.

c. "Institutional support services" means all services, facilities, equipment, personnel and expenditures associated with the creation and maintenance of approved research projects.

d. "Qualifying research institution" means the Institute for Medical Research in Camden, New Jersey, the University of Medicine and Dentistry of New Jersey, Rutgers--The State University, Princeton University and any other institution approved by the commission, which is conducting an approved research project.

**HISTORY:** L. 1983, c. 6, § 3; amended 1984, c. 237, § 1; 2000, c. 63, § 1, eff. July 13, 2000.

§ 52:9U-4. Commission on Cancer Research

a. There is established in the Executive Branch of the State government, the New Jersey State Commission on Cancer Research. For the purposes of complying with the provisions of *Article I, Section IV, paragraph 1 of the New Jersey Constitution*, the commission is allocated within the Department of Health, but notwithstanding that allocation, the commission shall be independent of any supervision or control by the department or by any board or officer thereof.

b. The commission shall consist of 11 members, including the Commissioners of the Department of Health and the Department of Environmental Protection or their appointed designees, and nine citizens of New Jersey or persons otherwise associated with the State, who are known for their knowledge, competence, experience or interest in medical research, appointed by the Governor with the advice and consent of the Senate.

c. The term of office of each appointed member shall be three years, but of the members first appointed, three shall be appointed for terms of one year, three for terms of two years, and one for a term of three years. The terms of office of the two additional members appointed pursuant to this amendatory act shall expire upon the expiration of the term of office of the member first appointed for a term of three years. All vacancies shall be filled for the balances of the unexpired terms in the same manner as the original appointments. The members of the commission shall not receive any compensation for their services, but shall be reimbursed for the actual and necessary expenses incurred in the performance of their duties as members of the commission.

§ 52:9U-5. Duties of commission

c. The term of office of each appointed member shall be three years, but of the members first appointed, three shall be appointed for terms of one year, three for terms of two years, and one for a term of three years. The terms of office of the two additional members appointed pursuant to this amendatory act shall expire upon the expiration of the term of office of the member first appointed for a term of three years. All vacancies shall be filled for the balances of the unexpired terms in the same manner as the original appointments. The members of the commission shall not receive any compensation for their services, but shall be reimbursed for the actual and necessary expenses incurred in the performance of their duties as members of the commission.

### § 52:9U-5. Duties of commission

The commission shall:

- a. Review and authorize approved research projects;
- b. Apportion all available funds to qualifying research institutions to finance approved research projects and necessary institutional support services;
- c. Ensure that funds appropriated to approved research projects are not diverted to any other use;
- d. Take steps necessary to encourage the development within the State of research projects on:
  - (1) the causes of cancer; and
  - (2) pain management and palliative care for persons diagnosed with cancer;
- e. Compile a directory of all cancer research projects being conducted in the State; and
- f. Provide the Governor and the Legislature with a report by January 30 of each year describing the status of the commission's activities and the results of its funded research efforts.

The commission is authorized to:

- a. Adopt rules and regulations concerning the operation of the commission, the functions and responsibilities of its officers and employees and other matters as may be necessary to carry out the purposes of this act;
- b. Maintain offices at such places within the State as it may designate;
- c. Employ an executive director and other personnel as may be necessary, whose employment shall be in the unclassified service of the State, except that employees performing stenographic or clerical duties shall be appointed pursuant to Title 11 (Civil Service) of the Revised Statutes;
- d. Design a fair and equitable system for the solicitation, evaluation and approval of proposals for cancer research projects;
- e. Apply for and accept any grant of money from the federal government, which may be available for programs relating to research on the causes of cancer;
- f. Enter into contracts with individuals, organizations and institutions necessary or incidental to the performance of its duties and the execution of its powers under this act; and
- g. Accept gifts, grants and bequests of funds from individuals, foundations, corporations, governmental agencies and other organizations and institutions.

### § 52:9U-6.1. Grants; qualified research institution defined

The New Jersey State Commission on Cancer Research shall solicit, receive, evaluate and approve applications of qualified research institutions for grants from the "New Jersey Breast Cancer Research Fund," established pursuant to section 1 of P.L.1995, c.26 (C.54:4-9-25.7), to conduct research relating to the causes, prevention, screening, treatment and cure of breast cancer. As used in this section, "qualified research institution" may include academic medical institutions, State or local government agencies, public or private organizations within New Jersey, and any other institution approved by the commission, which is conducting a breast cancer research project.

### § 52:9U-6.2. Applications for grants

The New Jersey State Commission on Cancer Research shall solicit, receive, evaluate and approve applications of qualified research institutions for grants from the "New Jersey Prostate Cancer Research Fund," established pursuant to section 1 of P.L. 2001, c. 305 (C. 54:4-9-25.21), to conduct research relating to the causes, prevention, screening, treatment and cure of prostate cancer. As used in this section, "qualified research institution" may include academic medical institutions, State or local government agencies, public or private organizations within New Jersey, and any other institution approved by the commission, which is conducting a prostate cancer research project.

### § 52:9U-6.3. Grants from "New Jersey Lung Cancer Research Fund"

The New Jersey State Commission on Cancer Research shall solicit, receive, evaluate and approve applications of qualified research institutions for grants from the "New Jersey Lung Cancer Research Fund," established pursuant to section 1 of P.L.2009, c.172 (C.54:4-9-25.27), to conduct research relating to the causes, prevention, education, screening, treatment and cure of lung cancer. As used in this section, "qualified research institution" may include academic medical institutions, State or local government agencies, public or private organizations within New Jersey, and any other institution approved by the commission, which is conducting a lung cancer research project.

### § 52:9U-7. Chairman and vice-chairman; election; duties; duties of executive director

The members of the commission shall annually elect a chairman and a vice-chairman from among their number. The chairman shall be the chief executive officer of the commission, shall preside at all meetings of the commission and shall perform other duties that the commission may prescribe.

The executive director shall serve as secretary to the commission and shall carry out its policies under the direction of the chairman.

### § 52:9U-8. Annual appropriation

\$ 1,000,000.00 shall be appropriated annually from the Cancer Research Fund established by P.L.1982, c. 40 (C. 54:-04-8 et al.) to effectuate the purposes of this act, except that only \$ 500,000.00 shall be appropriated from the fund in fiscal year 1982-1983.

## Staff Contact Information

### New Jersey Commission on Cancer Research

**Commission Office**  
25 South Stockton St.  
2nd Floor, Rear  
PO Box 360  
Trenton, NJ 08625-0360

### **Lisa H. Cummings, RN, MS**

#### ***Executive Director***

Senior Policy Advisor  
New Jersey Department of Health  
Office of Research Initiatives  
(609) 913-5009  
[Lisa.Cummings@doh.nj.gov](mailto:Lisa.Cummings@doh.nj.gov)

### **Jennifer Sullivan, Esq**

#### ***Executive Assistant***

New Jersey Department of Health  
Office of Research Initiatives  
(609) 913-5012  
[Jennifer.Sullivan@doh.nj.gov](mailto:Jennifer.Sullivan@doh.nj.gov)

### **Trischa Zumbach, MPH**

#### ***Contract Administrator, NJCCR***

New Jersey Department of Health  
Office of Research Initiatives  
(609) 913-5009  
[Trischa.Zumbach@doh.nj.gov](mailto:Trischa.Zumbach@doh.nj.gov)

### **Dr. Candido Africa, MD**

#### ***Program Management Officer, NJCCR***

New Jersey Department of Health  
Office of Research Initiatives  
(609) 913-5011  
[Candido.Africa@doh.nj.gov](mailto:Candido.Africa@doh.nj.gov)

### **Jim McGarry**

#### ***Consultant***

[jimmcgarry@gmail.com](mailto:jimmcgarry@gmail.com)

### **Acknowledgements**

The New Jersey Commission on Cancer Research would like to express its sincere appreciation to all present and past Commission members, and the New Jersey Department of Health staff.





