



Weill Cornell Medicine

Sandra and Edward Meyer Cancer Center

2018 Annual Report

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INSIDE THE REPORT

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"Every day we make a new discovery that transforms the ways we approach cancer research and care."

- Lewis C. Cantley, Ph.D.
Meyer Director

A Word from the Director

Lewis C. Cantley, Ph.D.

The Sandra and Edward Meyer Cancer Center has made significant efforts towards fulfilling the center's mission: to advance the standard of care through the rapid translation of novel discoveries into treatment and prevention methods for our patient population while training future leaders in cancer research and care. Since my arrival, the Meyer Cancer Center has continued to become a national leader in the finding cures for cancer through the integration of scientific inquiry, clinical research, and coordinated, compassionate and personalized patient care.

As Meyer Director of the Cancer Center, it is a tremendous privilege to collaborate with investigators across disciplines with a wide range of expertise, whose dedication and innovation change not only in the way in which we advance discovery, but the way we understand therapies and ultimately deliver care to patients and their families.

I would like to thank our remarkable Meyer Cancer Center Senior Leadership and our distinguished cancer center faculty, staff, and students for their continued commitment to making a difference in cancer research and care. I look forward to another exciting year for the Meyer Cancer Center in 2019.

Cancer Center Senior Leadership

Leadership is a critical component of an effective organization, and the Meyer Cancer Center senior leadership team provides strategic direction and oversight in the areas of basic science, clinical research, clinical care and administration.



Lewis C. Cantley, Ph.D.



John Blenis, Ph.D., Associate Director of Basic Science, oversees the direction of basic science research programs, as well as the Collaborative Research Initiative, the Meyer Cancer Center's annual pilot grant program.



Julie L. Boyer, Ph.D., Associate Director of Administration, supports all aspects of cancer center strategic development and provides oversight for cancer center initiatives and resources.



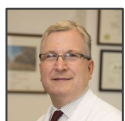
Andrew Dannenberg, M.D., Associate Director of Cancer Prevention, provides recommendations on program development in population sciences.



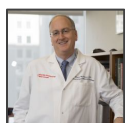
Howard A. Fine, M.D., Associate Director of Translational Research, has responsibility for facilitating collaborations between basic scientists and clinical researchers.



Silvia Formenti, M.D., Associate Director of Radiation Oncology, integrates the efforts of our growing immunotherapy program on the continuum from basic science through clinical practice.



John P. Leonard, M.D., Associate Director of Clinical Research, facilitates a robust clinical trials operation, ensuring that our clinical trial portfolio and accruals meet the metrics for an NCI-designated cancer center.



David M. Nanus, M.D., Associate Director of Clinical Services, has responsibility for establishing a unified clinical practice that will provide the highest quality multidisciplinary care across divisions, departments, and network sites.



Barry Sleckman, M.D., Ph.D., Associate Director of Shared Resources, oversees resource operations that support basic, translational, and clinical research.

Administration

A team of dedicated professionals implements the vision of the Director, **Lewis Cantley, Ph.D.**, and supports the efforts of all Meyer Cancer Center (MCC) members. These individuals work collaboratively with **Julie Boyer, Ph.D.**, Associate Director of Administration, to develop strategic plans, manage MCC finances, guide research programs, promote shared research resources, coordinate seminars, evaluate membership, facilitate recruitment, distribute pilot grant funding, disseminate information, enhance cancer clinical trial portfolios and support clinical initiatives.

Erick Herrscher, Assistant Director, Administration

Mr. Herrscher is the key administrator providing strategic oversight for development, submission, and management of a National Cancer Institute P30 Cancer Center Support Grant. He is also leading the implementation of informatics systems to maintain and report relevant cancer center data, and he interfaces with the Joint Clinical Trials Office to align our cancer clinical trial operations and portfolios with NCI requirements.

Katelyn Carbonell, M.B.A., Research Program Manager

Ms. Carbonell provides oversight for the ongoing development of MCC Research Programs according to NCI guidelines. She is responsible for data acquisition and preparation in support of the P30, and manages all MCC research program-related initiatives.

Lucie Lu, Administrative Specialist

Ms. Lu provides administrative and programmatic support for all MCC initiatives. She is responsible for coordinating Research Program activities, external review boards, recruitment efforts, and the MCC seminar series.

Bo Wang, Finance Administrator

Mr. Wang is responsible for the direct administration of the MCC Director's grant portfolio and supports MCC financial activities.



Belfer Research Building



Belfer Research Building Common Area

"It is the long history of humankind (and animal kind, too) that those who learned to collaborate and improvise most effectively have prevailed."

– Charles Darwin

Faculty

Meyer Cancer Center Membership

The Meyer Cancer Center membership encompasses cancer-related health professionals, laboratory, clinical, and population research scientists who hold a full-time faculty appointment at Weill Cornell Medicine or Cornell's Ithaca campus. Through their dedication and contributions, MCC members help fulfill the center's mission of advancing the standard of cancer care. With **302 members in 2018**, the center has continued to further its reach across disciplines to capture the diverse faculty talents and expertise throughout the institution.

In alignment with Cancer Center Support Grant (CCSG) guidelines set forth by the National Cancer Institute (NCI), the MCC identifies full-time Weill Cornell Medicine faculty members who are eligible for inclusion in the CCSG application for NCI designation based on the following criteria:

1. has cancer-relevant, peer-reviewed, non-training funding from the NIH/NCI or from an NCI-recognized organization; or
2. is a clinical science leader as evidenced by leadership of therapeutic investigator initiated institutional trials; or
3. is newly recruited in collaboration with the Meyer Cancer Center and is still within their start-up phase; or
4. holds a Meyer Cancer Center leadership position.



**Weill Cornell
Medicine**
Sandra and Edward
Meyer Cancer Center

302 Members

26 Departments

CCSG membership is reviewed annually by Research Program Leaders to ensure relevance of the member's professional activities to the Meyer Cancer Center's mission. Continued membership is contingent upon maintenance of the specified criteria and participation in center and programmatic activities.

Recruitment

The MCC continued to bolster its excellence in research and clinical care through strategic faculty recruitment. A number of impactful recruitments were made in 2018 to enhance existing research programs and efforts. New faculty members in 2018 include:

Lisa Newman, M.D. is a Professor of Surgery and the Chief of the Section of Breast Surgery. Dr. Newman is a world-renowned surgeon and researcher who was recruited to WCM from the Henry Ford Health System in Detroit, Michigan. Dr. Newman



leads the multidisciplinary breast oncology program, which provides comprehensive breast cancer care through state-of-the-art technologies and therapies. Dr. Newman's research focuses on race and ethnic disparities in cancer risks and outcomes; she is particularly interested in triple-negative breast cancer.

Massimo Loda, M.D., recruited from Dana-Faber



Cancer Institute, was appointed as the Chair of the Department of Pathology and Laboratory Medicine at WCM in November. Dr. Loda is an international expert in molecular pathology, with a research focus on urologic oncology. Based on his ground-breaking research in prostate cancer, Dr. Loda will assume the Principal Investigator role of WCM's Specialized Program of Research Excellence (SPORE) in Prostate Cancer. His innovative approaches to understanding cell metabolism through biochemical and genomic technologies will serve as valuable attributes to the prostate cancer SPORE team.

Cora Sternberg, M.D. is a medical oncologist



recruited to the Hematology and Medical Oncology Division of WCM's Department of Medicine from San Camillo-Forlanini Hospital in Rome, Italy. Dr. Sternberg is a leading genitourinary (GU) cancer researcher with significant experience in developing novel therapies and targeted agents in the treatment of GU cancers. Dr. Sternberg will serve as the Clinical Director of the Englander Institute for Precision Medicine and will work toward increasing patient access to genomic sequencing and precision medicine.

Dawid Nowak, Ph.D. is an Assistant Professor



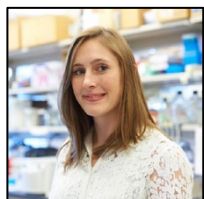
of Pharmacology in Medicine who was recently recruited to WCM from Cold Spring Harbor Laboratory on Long Island, New York. Dr. Nowak's laboratory examines the role of mutational patterns in the evolution of metastatic disease, specifically in prostate cancer. His research focuses on developing improved prostate cancer models through the utilization of data derived from human genomic analysis.

Marcus DaSilva Goncalves, M.D., Ph.D., is a



recent Assistant Professor of Medicine. Dr. Goncalves trained and completed his fellowship at Weill Cornell Medicine. He is interested in obtaining a better understanding of the role of hormones, cytokines, and metabolites in regulating cancer metabolism and how these factors are altered with dietary interventions.

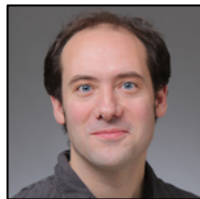
Ashley Laughney Bakhoun, Ph.D. is a Burroughs



Wellcome Fund recipient recruited from Memorial Sloan Kettering Cancer Center. Dr. Laughney Bakhoun is an Assistant Professor of Physiology and Biophysics and of Cancer

Genomics in the Institute for Computational Biomedicine. Her research focuses on the integration of cancer metastasis with single cell transcriptomic and image analysis and mathematical modeling to better understand drug resistance in cancer.

Matthias Stadtfeld, Ph.D. was recruited from the



Skirball Institute at New York University Langone Health. Dr. Stadtfeld is an Assistant Professor in the Department of Medicine, Division of Regenerative Medicine. Dr. Stadtfeld's laboratory uses

mouse models to investigate the causes of epigenetic abnormalities that occur in iPS cell formation to better understand epigenetic reprogramming.

Research Programs

As a center aspiring to become NCI-designated, thoughtful introspection and continued assessment have been instrumental in the development of the organizational structure of our Research Programs. Members within a given program demonstrate shared research interests, areas of expertise, complementary objectives, and reflect the center's basic, clinical and translational strengths. The MCC Research Programs illustrate wide-ranging excellence across four major areas: Solid Tumors, Hematologic Malignancies, Cancer Biology and Cancer Genetics, Epigenetics and Systems Biology. Research Programs foster collaborative environments wherein members exchange ideas, experimental techniques, and challenging research questions – ultimately creating opportunities for innovation towards advancing the standard of cancer care.

Research Program Leaders



Solid Tumors

Nasser Altorki, M.D.
Program Leader



Hematologic Malignancies

Ari Melnick, M.D.
Program Leader



Cancer Biology

Timothy McGraw, Ph.D.
Program Leader



Cancer Genetics, Epigenetics & Systems Biology

Steven Lipkin, M.D., Ph.D.
Olivier Elemento, Ph.D.
Program Co-Leaders



Cancer Genetics, Epigenetics and Systems Biology Research Program

Program Co-leaders: **Olivier Elemento, Ph.D.**
Steven Lipkin, M.D., Ph.D.

The Cancer Genetics, Epigenetics, and Systems Biology (CGESB) Research Program is co-led by Drs. Steven Lipkin and Olivier Elemento. Dr. Lipkin's research focuses on cancer predisposition gene mutations, mechanisms of tumorigenesis, and immunoprevention of patients with DNA repair gene mutations. Dr. Elemento's laboratory is centered around the systems biology of regulatory networks in normal and malignant cells. His work on the epigenomics of cancer includes high-throughput experimental approaches and pattern detection techniques to investigate the function of these genes.

Members of the Cancer Genetics, Epigenetics and Systems Biology Program use next-generation sequencing, advanced computing, and experimentation to identify and understand the function of genetic and epigenetic alterations in tumors. These can be translated into precision medicine clinical tools, such as biomarkers for therapy selection, predisposition and early cancer detection as well as targets for novel cancer therapies.

2018 Program Highlights

New insights into the role of the SPOP fusion driver gene in prostate adenocarcinoma detection and prognosis

Prostate cancer is one of the most common tumors in men, and the Prostate-Specific Antigen (PSA) test is a diagnostic test used to detect men with prostate cancer. Previously, Weill Cornell Medicine scientists identified SPOP translocations as common mutations in prostate cancer; more recently, physician-scientist **Chris Barbieri, M.D., Ph.D.**, in an article published by *Cancer Cell*, showed that the presence of SPOP translocations in prostate cancers influences the levels of PSA, and that incorporating SPOP mutation status into screening can improve prostate cancer surveillance. **Dr. Barbieri** was one of the first recipients of the NCI's Method to Extend Research in Time (MERIT) Award, a new grant mechanism that provides longer term grant support to early stage investigators, for his work on studying the role of SPOP fusion gene prostate cancer driver.

Discovery of new cancer driver gene mutations

Cancer driver mutations cause cancer growth and are potential drug targets. Most studies to date have focused on cancer mutations that occur in the parts of genes that encode proteins. However, ~99% of somatic cancer mutations are non-protein coding, affecting the levels and composition of proteins and non-coding RNAs in cancer cells. Assistant Professor **Ekta Khurana, Ph.D.**, was a member of the analytical team in the pan-cancer analysis working group of tumor whole genomes. She has used new computational tools to identify novel cancer drivers by analyzing non-coding mutations, which includes several novel therapy targets. **Dr. Khurana** received a new NCI grant this year to validate novel cancer drivers as therapy targets based on analysis of non-coding DNA mutations in cancer.

New Grants

Several additional CGESB members were also awarded grants, including **Lukas Dow, Ph.D.**, who received a number of awards, including an NCI-funded R01 on the “Progression, Response, and Resistance of RSPO Fusion Colorectal Cancer.” **Dan Landau, M.D., Ph.D.**, received the NIH Director’s DP2 award for his work on the evolution of leukemia. And **Irene Min, Ph.D.**, was awarded a grant from the New York State Stem Cell Science (NYSTEM) for “Engineering Induced Pluripotent Stem Cells for ‘Off the Shelf’ Adoptive T-Cell Therapy.”

High Impact Publications

- **Jessica Tyler, Ph.D.**, on “The Histone Chaperones ASF1 and CAF-1 Promote MMS22L-TONSL-Mediated Rad51 Loading onto SSDNA During Homologous Recombination in Human Cells” in *Molecular Cell*
- **Effie Apostolou, Ph.D.**’s article “Shaping the Pluripotent Genome: Switches, Borders, and Loops” was published in *Cell Stem Cell*
- **Marcin Imielinski, M.D., Ph.D.**, was published in *Science* for his work “Fusion Oncogenes – Genetic Musical Chairs”
- **Andrea Sboner, Ph.D.**, and **Chris Barbieri, M.D., Ph.D.**, were contributors to “The Long Tail of Oncogenic Drivers in Prostate Cancer,” published in *Nature Genetics*

The CGESB program looks forward to continuing to expand its research excellence through the securement of additional external, peer-reviewed funding to further develop opportunity for basic science discoveries which lead to clinical trials and impact the center’s catchment area.

Cancer Biology Research Program

Program Leader: **Timothy McGraw, Ph.D.**

The Cancer Biology Research Program is led by Dr. Tim McGraw, Professor of Biochemistry and of Biochemistry in Cardiothoracic Surgery. Dr. McGraw's research focuses on quantitative cell biological interrogation of regulated membrane protein trafficking as a mechanism to control cell function and metabolism.

A broad range of biological expertise pertinent to cancer biology is represented in the Cancer Biology Research Program, work that spans the complete biological scale from studies of single protein molecules to the impact of whole-body metabolism on tumorigenesis. The program's overall mission is to accelerate the translation of discoveries made in the laboratory to the clinic. This is accomplished by the program providing a forum for productive interactions between basic and clinical scientists.

Although the specific scientific topics investigated by program membership are varied, the primary scientific aims of the program are to:

- 1) define the therapeutically-targetable roles of the tumor microenvironment in tumorigenesis, and;
- 2) reveal tumor metabolic vulnerabilities that can be therapeutically utilized.

2018 Program Highlights

This past year a number of intra- and inter-program collaborations have developed around these aims:

The Tumor Microenvironment and Immunity

The tumor immune landscape is a primary interest of the programs focus on the tumor microenvironment. Dr. Vivek Mittal and colleagues have investigated the impact of anti-PD-1 therapy on the reprogramming of tumor immune cells in a novel, pre-clinical mouse model of KRAS/p53-driven lung tumorigenesis (Markowitz et al, 2018). Of note, this project represents a collaboration among the Cancer Biology, Solid Tumors and Cancer Genetics, Epigenetics and Systems Biology (CGESB) Research Programs. This past year, two different program groups reported on the role ER stress response in two distinct solid tumor types (*Pommier et al* and *Song et al*). Both these studies point to the potential of targeting ER stress as a means to enhance immune-mediate tumor control. Finally, this past year a number of influential review articles on the tumor microenvironment were authored by program membership: **Nasser Altorki et al.**, Samuel Bakhoun and **Lewis Cantley**, and **Claire Vanpouille-Box et al.**

Cancer Metabolism

There is significant strength within the program pertinent to cancer metabolism. These studies interrogate cancer metabolism at both the cellular and whole-body levels. Examples of the contributions of program members in the area of cancer metabolism this past year include **Dr. John Blenis** lab's discovery of a molecular signaling pathway responsible for metabolic reprogramming of cancer cells (*He et al*), **Dr. Lewis Cantley** lab's demonstration of how whole-body metabolism can impact the efficacy of targeted therapies, and **Dr. Andrew Dannenberg** lab's investigation of body fat as a risk for breast cancer in postmenopausal women (*Iyengar et al*). Program membership also authored a number of influential reviews and opinion pieces on metabolism this past year, for example nutrition and cancer prevention (*Lippman et al.*), autophagy in cancer (*Rybstein et al.*) and growth factor control of metabolism (Haeusler et al.).

Studies of the impact of altered metabolism on cancer, in addition to being a strength of the program, are also specifically relevant to the NewYork-Presbyterian/Brooklyn Methodist Hospital catchment area because African Americans are at increased risk to develop insulin-resistance as a result of over-nutrition than are European Caucasian populations, and insulin-resistance is a key risk factor for a number of cancers.

Consequently, one objective of the cancer biology program is to translate advances in an understanding altered metabolism and cancer to a better understanding of the increased cancer risks in African Americans.

New Grants

A number of program members received notable grant awards in 2018, including:

- **Dr. Paraskevi Giannakakou's** NCI R01 "A novel, short isoform of the +TIP microtubule (MT) binding protein CLIP170 confers taxane resistance by obstructing the MT pore"
- **Dr. David Lyden's** NCI R35 award "Systemic regulation of metastasis"
- **Dr. Harold Varmus's** NCI U01 award "Studies of the initiation and progression of small cell lung cancer using cells derived by differentiation from human pluripotent stem cells"

In 2019, the Cancer Biology Research Program will build on the accomplishments of 2018 to continue in its mission of nurturing the translation of laboratory-based discoveries to the benefit of patients.

Hematologic Malignancies Research Program

Program Leader: **Ari Melnick, M.D.**

A major goal of the Hematologic (Heme) Malignancies Research Program is to identify mechanisms underlying these diseases and translate our research discoveries into novel cutting-edge targeted therapies. The Heme Malignancies Research Program is led by Dr. Ari Melnick, whose research aims at understanding the mechanisms through which transcriptional and epigenetic regulation become disrupted in cancers. Our translational and clinical researchers are spearheading collaborative research in a spectrum of disease specific areas including lymphoid malignancies, myeloid malignancies, myeloma, myeloproliferative neoplasm and bone marrow transplant in order to achieve innovative breakthroughs in the diagnosis, care and treatment of patients with hematological cancers.

Our research program has four major scientific objectives. They are to:

1. Pioneer rational translation of combinatorial regimens for B-cell lymphomas and Acute Myeloid Leukemia (AML).
2. Understand how epigenetic mechanisms drive cancer and serve as therapeutic targets.
3. Develop improved strategies to detect and eradicate MRD in AML and myeloma.
4. Define the nature and clinical significance of the pre-malignant tumor precursor cell.

2018 Program Highlights

New Grants

Dr. Selina Chen-Kiang was recently awarded a five-year, **\$9 million prestigious program project grant** to investigate mechanism-based targeting of mantle cell lymphoma (MCL). Her team discovered that inhibition of the CDK4 enzyme induces cell cycle arrest, which not only prevents cancers cells from dividing, but also perturbs gene expression. To translate these findings, Dr. Chen-Kiang identified a small molecule that could mimic the natural CDK4 inhibitor. In three small Phase 1 clinical trials, her team found that palbociclib, which is a FDA approved drug for breast cancer, could result in regression of MCL tumors and induced remission in a significant number of the enrolled patients. The new P01 grant will help Dr. Chen-Kiang and her team expand on these findings.

Dr. Ari Melnick was awarded a seven-year, **\$7.2 million NCI outstanding investigator grant**. This R35 grant is aimed at targeting epigenetic circuits in B-cell lymphomas. Studies from the Melnick Lab discovered that the humoral immune response is controlled through novel and specific epigenetic mechanisms linked to histone modifying enzymes, which cause malignant transformation when perturbed through somatic mutations that are present in a majority of patients with B-cell lymphomas. Dr. Melnick's team will determine the signals that control histone modifying complexes during the normal immune response and how somatic mutations of histone modifying enzymes reprograms B-cells to undergo malignant transformation by disrupting these signals. His team will also identify and test the efficacy of epigenetic- targeted drugs that counteract the effect of these mutations on the epigenome and sensitize lymphomas to other targeted agents and immunotherapies.

Another **R01 grant awarded to Dr. Melnick** is focused on the investigation of chromosomal conformation in germinal center B-cells during the humoral immune response and how its perturbation causes lymphoid malignancy, which will lead to development of therapies that could reverse these oncogenic effects.

Dr. Chen-Kiang was awarded a five-year, \$2.5 million **SCOR grant** from the Leukemia and Lymphoma society (LLS) to investigate longitudinal functional genomics in MCL therapy and drug resistance.

Dr. Melnick received a **LLS translational research program grant** and a **Starr Cancer Consortium** grant to study the mechanistic basis of therapy resistant B-cell lymphomas.

Dr. Lisa Guilino Roth was also awarded the **Starr Cancer Consortium grant** to investigate mechanisms that sensitize tumors to EBV-directed cellular therapy.

High Impact Publications

Researchers from the Heme Malignancies program have been highly productive over the past year in publishing important clinical and scientific manuscripts. Some of the key publications are highlighted below.

Dr. Jia Ruan et al recently published a landmark clinical study (*Blood* 2018) highlighting the first trial of lenalidomide-rituximab as front-line therapy in MCL that can achieve excellent outcome without intensive therapy. The initial results of this trial, published in *NEJM*, raised the profile of our lymphoma team because they showed that a less intensive, non-chemotherapy regimen could be effective in MCL. The 5-year follow up data continue to show excellent outcomes and have been used to support off-label use outside of WCM as well as multiple novel front-line studies, including an IIT of acalabrutinib-lenalidomide-rituximab, which will open at WCM in early 2019.

Dr. Barry Sleckman's team recently published a study (*Mol Cell*, 2018) identifying a modulator of retrovirus infection (MRI) protein that serves as an adaptor during classical non-homologous end joining (cNHEJ). This work showed that MRI is required for cNHEJ-mediated double strand break repair in lymphocytes deficient of cNHEJ factors.

In another landmark study published in *Nat Immunol* (2018), **Dr. Melnick** and his team discovered that histone demethylase LSD1 is required for germinal center formation and BCL6-driven lymphomagenesis. These results indicate an essential role for LSD1 in the humoral immune response, where it modulates enhancer function by forming repression complexes with BCL6.

In another important study, **Dr. Melnick's group** found that TET2 deficiency causes germinal center hyperplasia, impairs plasma cell differentiation and promotes B-cell lymphomagenesis (*Cancer Discov.* 2018). The results of this study advocate for sequencing *TET2* in patients with lymphoma and for the testing of epigenetic therapies to treat these tumors.

Dr. Melnick's team also recently developed pharmacologically tractable, irreversible substrate-mimetic inhibitors of MALT1 paracaspase that suppresses B-cell lymphoma growth (*J Clin Invest.* 2018). The results of this study suggested that MALT1 inhibition could prime lymphomas for immune recognition by cytotoxic immune cells.

Dr. Pinkal Desai et al published a seminal study (*Nat Med.* 2018) demonstrating that acute myeloid leukemia (AML)-associated mutations can be detected years prior to diagnosis of overt disease and may present an opportunity for disease intervention and/or interception.

Dr. Gail Roboz *et al* published a Phase 1 trial of plerixafor combined with decitabine in newly diagnosed older patients with acute myeloid leukemia (*Haematologica* 2018) exploiting the potential for plerixafor to mobilize leukemia stem cells in AML patients treated with decitabine. This study highlights the translational collaboration between the leukemia clinical team and the **Monica Guzman** lab.

Schuurhuis et al published an article (*Blood* 2018) on Minimal/measurable residual disease in AML. **Dr. Roboz** at WCM is a senior leader of the European Leukemia Net (ELN) Working Party on MRD in AML; this is the first-ever consensus document on the subject. **Dr. Monica Guzman** is leading US efforts to harmonize flow cytometry with the ELN in AML.

In another study, **Roboz et al** investigated the dose, schedule, safety, and efficacy of guadecitabine in relapsed or refractory AML (*Cancer* 2018) that led to an ongoing IIT with the agent in patients with myeloproliferative neoplasms (*PI Desai*).

From our bone marrow transplant team, *Reich-Slotky et al* recently published a study comparing time to engraftment between autologous patients receiving washed versus non-washed cryopreserved peripheral blood stem cell products (*Leuk Lymphoma* 2018). This study showed that direct thaw and infusion of cryopreserved PBSC without washing results in significantly shorter time to recovery of neutrophils and platelets after autologous transplantation.

Dr. Usama Gergis et al published a pilot study of adoptive Immunotherapy with Cord Blood for the treatment of refractory AML showing encouraging activity (*Biol Blood Marrow Transplant* 2018).

In another recent study, **Dr. Koen Van Besien et al** showed that prophylactic rituximab prevents EBV PTLD in haplo-cord transplant recipients at high risk (*Leuk Lymphoma, in press*). One dose of pre-transplant rituximab provided 100% protection from EBV.

Overall, the Heme Malignancies Research Program continues to expand the programmatic impact through cutting-edge scientific discoveries and procuring additional NIH funding which is leading to development of new investigator-initiated trials.

Solid Tumors Research Program

Program Leader: **Nasser Altorki, M.D.**

The Solid Tumors Research Program is composed of researchers conducting translational studies centered on diagnosis, treatment and therapy of a variety of cancer types including breast, lung, genitourinary, brain and gastrointestinal malignancies. Led by Dr. Nasser Altorki, the Director of the Neuberger Berman Lung Cancer Research Center, Professor of Cardiothoracic Surgery and the Chief of the Division of Thoracic Surgery, the Solid Tumors Program reflects the center's wide-range of clinical and translational investigators. Dr. Altorki's research focuses on the use of immunotherapy in the treatment of early stage lung and esophageal cancers as characterizing the molecular events associated with progression of precursor lesions to invasive pulmonary adenocarcinoma.

The program's overall mission is to accelerate the introduction of translation ready concepts from the laboratory to the clinic. This is accomplished through the conduct of high-quality investigator-initiated trials designed with both clinical and biological endpoints. The results of these trials will not only be paradigm changing in the clinic but will further enhance our understanding of human pathobiology thus informing the design of future research and treatments. We believe that as this informative cycle is repeatedly driven by intra- and inter-programmatic collaborations between clinical and basic scientists, resulting in improvement in the outcomes of patients with solid malignancies.

Specifically, the program aims to:

- 1) Investigate, in preclinical modes and early clinical trials across solid tumor types, the immunomodulatory effects of cytotoxic therapy (chemotherapy/radiation) and/or molecularly targeted therapies when administered in combination with immune-check point inhibitors or other immunotherapeutic strategies
- 2) Discover novel tissue based or circulating biomarkers (e.g. CTCs, whole genome ctDNA) predictive of response to therapy and of minimal residual disease in MRD
- 3) Determine whether response to therapy in clinical trials can be replicated in patient specific tumor organoids and immune-organoids and to determine if efficacy in organoids maybe predictive of clinical outcome

The program holds monthly meetings that highlight successful collaborations between scientists and clinicians. Such meetings usually begin with a clinical presentation that outlines the clinical challenge followed by a presentation describing an ongoing translational project or an IIT with translational endpoints intended to address the clinical problem. This meeting model has been particularly popular among the membership at large including members of other research programs in the MCC. Some of the monthly meetings are reserved for presentations of multi-PI projects that have been granted significant awards such as the prostate SPORC grant, led by **Dr. Massimo Loda** and the SU2C award in colorectal cancer, led by **Drs. Manish Shah** and **Lewis Cantley**. The purpose of these meetings is to incentivize and inspire members by demonstrating successful models of clinician/scientist collaboration.

Additionally, several joint meetings with other research programs were held throughout the year to further expand interactions between scientists and clinicians where shared areas of interest may emerge, leading to joint research projects. These meetings were held jointly with the Cancer Biology and the Cancer Genetics, Epigenetics, and Systems Biology Research Programs.

2018 Program Highlights

New Grants

Several members of the Solid Tumors Research Program received grants from a variety of sponsors, including:

- A Department of Defense award was made to **Dr. Scott Tagawa** for his work on “Molecular and Clinical Correlates with Prostate-specific Membrane Antigen (PSMA)-targeted Radionuclide Therapy”
- **Dr. Sandra Demaria’s** work on “Modulation of Breast Cancer Immunological Microenvironment by Tumor-derived Exosomes” was awarded by the Chemotherapy Foundation
- **Dr. Manish Shah** was a Co-PI on a collaborative NCI grant, led by **Dr. Paraskevi Giannakakou** (Cancer Biology Research Program), entitled “A Novel, Short Isoform of the +Tip Microtubule (MT) Binding Protein CLIP170 Confers Taxane Resistance by Obstructing the MT Pore”

High Impact Publications

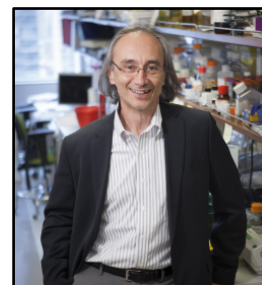
Solid Tumor Research Program members were also featured in several high-impact journals such as, *Nature Medicine*, *Molecular Cell*, *Cancer Cell*, *Cell* and *Nature*.

- An article entitled, “IRE1 α -XBP1 Controls T Cell Function in Ovarian Cancer by Regulating Mitochondrial Activity”, authored in collaboration with **Dr. Kevin Holcomb** was published in *Nature*.
- **Dr. Alain Borczuk** was a contributing author on an article published by *Nature Medicine*, which explores the upregulation in skeletal muscle by promotion of cachexia through ZIP14 by metastatic cancers.
- A highly collaborative article authored by program members **Drs. Claire Vanpouille-Box, Sandra Demaria, Silvia Formenti, and Lorenzo Galluzzi** (Cancer Biology Research Program) on Cytosolic DNA Sensing in Organismal Tumor Control was published in *Cancer Cell*.

The Solid Tumor Research Program is looking forward to expanding clinical trial participation, particularly in investigator-initiated trials, to underserved populations in our catchment area with emphasis on areas of programmatic strength, such as prostate cancer given its prevalence and mortality rates within the catchment population. In addition, the program will continue to leverage the Center’s expertise in PDX mice and organoids to build improved models for more effective therapies in solid malignancies.

Pilot Grant Program

Led By: **John Blenis, Ph.D.**
Associate Director for Basic Science



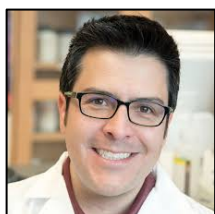
While scientific advances have substantially impacted the most complex challenges in cancer, the funding from the National Institutes of Health and other federal agencies required to support this work has significantly diminished nationwide. To support innovative, collaborative research that is promising yet unfunded, in 2017, the Meyer Cancer Center formally established the **Collaborative Research Initiative (CRI)**. The CRI, supported in part by the MCC's Cancer Research Innovation Fund and led by Associate Director of Basic Science, **John Blenis, Ph.D.**, promotes scientific excellence in research projects based on basic, translational, clinical, or population-based cancer research. The CRI seeks to facilitate high-quality partnerships that will ultimately result in competitive external grant applications and increase the center's academic excellence in alignment with NCI designation requirements.

Funding Mechanisms

Two separate requests for applications were circulated in June to Weill Cornell Medicine faculty, encouraging eligible investigators to apply. The first, a Pre-R01 RFA focused on investigators' ability to generate preliminary data and/or evidence of publication that would transition these pilot projects to cancer-focused R01-type grant applications. A minimum of two investigators per application was required to encourage inter- and intra- programmatic collaborations. The CRI received a total of 25 applications in response to this RFA. Following a standard peer review process, three separate teams, including one renewal application, were awarded \$100,000 each.

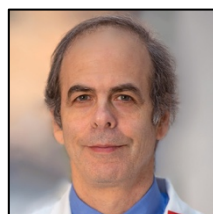
Pre-R01 Awards

Nutrition-Based Immune Reprogramming to Enhance Cancer Immunotherapy (renewal)



Juan Cubillos-Ruiz, Ph.D.

*William J. Ledger M.D.,
Distinguished Professor for
Infection and Immunology in
Obstetrics and Gynecology
Member, Cancer Biology
Research Program*



Andrew Dannenberg, M.D.

*Henry R. Erle, M.D. Roberts Family
Professor of Medicine
Professor of Medicine in Surgery
Associate Director of Cancer
Prevention
Member, Cancer Biology Research
Program*

Mechanism of IDH1/IDH2 Oncomutations in Inhibition of DNA Double-Strand Break Repair by Homologous Recombination and Vulnerability to PARP Inhibition in Cancer Treatment



Jihye Paik, Ph.D.

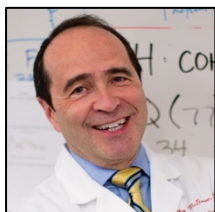
*Associate Professor of Pathology
and Laboratory Medicine
Member, Cancer Genetics,
Epigenetics & Systems Biology
Research Program*



Jessica Tyler, Ph.D.

*Professor of Pathology and
Laboratory Medicine
Member, Cancer Genetics,
Epigenetics & Systems Biology
Research Program*

PD-L1 Biology in Human Lung Cancer



Timothy McGraw, Ph.D.

*Professor of Biochemistry in
Cardiothoracic Surgery
Professor of Biochemistry
Program Leader, Cancer Biology
Research Program*



Nasser Altorki, M.D.

*Gerald J. Ford-Wayne Isom
Research Professor in Cardiothoracic
Surgery
Chief, Division of Thoracic Surgery
Director, Neuberger Berman Lung
Cancer Research Center
Program Leader, Solid Tumors
Research Program*

The second RFA focused on Pre-P01/SPORE research applications. A minimum of three projects led by more than one faculty member were required. The purpose of the RFA was to assist in solidifying project feasibility and planning for future multi-project external funding, including P01 or SPORE-type applications. Eight competitive applications were received and one award was made the amount of \$250,000 to a team of investigators led by **Silvia Formenti, M.D.**, and **Sandra Demaria, M.D.**

Pre-P01/SPORE Award

Using Radiotherapy to Jump-Start Cancer Responses to Immunotherapy



Silvia Formenti, M.D.
*Chair, Department of Radiation
Oncology
Chief Radiation Oncologist
Professor of Radiation Oncology
Associate Director of Radiation
Oncology
Member, Solid Tumors Research
Program*



Sandra Demaria, M.D.
*Professor of Radiation Oncology
Professor of Pathology and
Laboratory Medicine
Member, Solid Tumors Research
Program*

Director's Seminar Series

The Meyer Cancer Center Director's Seminar Series hosted many prominent guests who presented their ongoing work on a wide variety of clinical, basic and translational cancer research topics. To incorporate topics of broad interest, suggestions for speakers are solicited from the members of each research program.

2018 Meyer Cancer Center Director's Seminar Series

January 17	Richard Cerione, Ph.D. Cornell University College of Veterinary Medicine	<i>How Rho GTPases Led Us to New Areas of Biology and Disease</i>
February 21	Tom Cech, Ph.D. University of Colorado	<i>Telomerase: Live-cell Imaging and Gene Activation in Cancer</i>
June 6	John DiPersio, M.D., Ph.D. Washington University School of Medicine in St. Louis	<i>Optimizing Allogeneic Transplants with Targeted Therapies</i>
July 18	Yusuf Hannun, M.D. Stony Brook University Cancer Center	<i>Bioactive Sphingolipids in Colon Cancer</i>
September 19	Maria Figueroa, M.D. University of Miami School of Medicine	<i>Epigenetic Regulation in Normal and Malignant Hematopoiesis</i>
December 19	Gad Getz, Ph.D. Harvard Medical School	<i>Studying Resistance in Cancer</i>

Endowed Lectureships

In addition to the above seminar series, the MCC is fortunate to sponsor four endowed lectures featuring distinguished investigators who present research and clinical discoveries that represent seminal advances in cancer prevention or treatment.



The Mark S. Brower, M.D., Lecture in Hematology and Oncology was established to honor the memory of this beloved physician and faculty member. Hosted by **Dr. Lewis Cantley**, this annual lecture features internationally-recognized physicians, scientists or physician scientists that are advancing cancer care and research.

2018 – **Carl June, M.D.**

University of Pennsylvania

'T Cell Therapy for Cancer'



Carl June, M.D.

2017 – **James P. Allison, Ph.D.**

The University of Texas M.D. Anderson Cancer Center

'Immune Checkpoint Blockade in Cancer Therapy: New Insights, Opportunities and Prospects for a Cure'

2016 – **Siddhartha Mukherjee, M.D., Ph.D.**

Columbia University

'The Changing Landscape of Cancer: Past, Present & Future'

2015 – **Harold Varmus, M.D.**

Weill Cornell Medicine

'Confronting Cancer's Complexity'

2014 – **Lewis Cantley, Ph.D.**

Weill Cornell Medicine

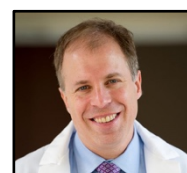
'Advances in Cancer Research: On the Front Lines of the Revolution'

The Daniel G. Miller, M.D., Endowed Lecture in Cancer Prevention is hosted by **Dr. Andrew Dannenberg** and honors the memory of this outstanding physician and distinguished pioneer in cancer prevention research.

2018 – **Avrum Spira, M.D.**

Boston University

‘Translating the Airway Transcriptome into Biomarkers for Lung Cancer Detection: The Road Less Traveled’



Avrum Spira, M.D.

2017 – **Scott Lippman, M.D.**

Moore's Cancer Center

‘Pre-cancer Atlas to Drive Precision Prevention and Immune Interception’

2016 – **Michael Pollak, M.D.**

McGill University

‘Diabetes, Obesity, and Cancer: Pharmacology and Physiology at the Interface’

2015 – **Ernest Hawk, M.D., M.P.H.**

The University of Texas M.D. Anderson Cancer Center

‘Advancing Cancer Prevention and Control as Plan A’

The Scott Wadler, M.D. Endowed Lecture honors the memory of former Weill Cornell Medicine and New-York Presbyterian Hospital faculty member Dr. Scott Wadler. Dr. Wadler was a translational oncologist who specialized in gastrointestinal and gynecological malignancies. **Drs. Manish Shah, David Nanus** and **Joseph Ruggiero** hold the distinct privilege to host this annual lecture.

2018 – **Monica Bertagnolli, M.D.**

Harvard Medical School

‘Promise to Proof: Advances in Clinical Trials Research’



Monica Bertagnolli, M.D.

2017 – **Sanford Markowitz, M.D., Ph.D.**

Case Western Reserve University School of Medicine

‘Genetic Lessons from Colon Cancer’

The Andrew I. Schafer, M.D., Lectureship in Hematologic Malignancies honors the leadership and mentorship of Andrew I. Schafer, M.D., a distinguished hematologist and leader in academic medicine. **Drs. Ari Melnick** and **John Leonard** host this annual event, inviting researchers on the cutting-edge to meet with WCM faculty and participate in brainstorming sessions with trainees.

2018 – **Markus Müschen, M.D., Ph.D.**

City of Hope Comprehensive Cancer Center

'Autoimmunity Checkpoints in B-Cell Malignancies'



Markus Müschen,
M.D., Ph.D.

2017 – **Anthony Green, M.D., Ph.D.**

University of Cambridge

'JAK/STAT Signaling, Stem Cell Subversion and Myeloid Malignancies'

2016 – **Harinder Singh, Ph.D.**

University of Cincinnati

'Towards a Gene Regulatory Logic of Immune Cell Development and Function'

2015 – **Bertrand Nadel, Ph.D.**

Centre d'Immunologie de Marseille-Luminy

'Follicular Lymphoma: Immunogenetics Ahead of Disease'

2014 – **Gabriel Rabinovich, Ph.D.**

University of Buenos Aires

'Integrating Immune and Vascular Signaling Programs in Cancer through Lectin-Glycan Interactions'

Annual Retreat

The 2018 MCC retreat was held on April 27 and featured a half day of faculty talks and brainstorming sessions, including a discussion panel on strengthening departmental partnerships and enhancing programmatic efforts to advance the MCC's mission of becoming an NCI designated center. Chaired by Associate Director of Radiation Oncology, **Silvia Formenti, M.D.**, and Associate Director of Shared Resources, **Barry Sleckman, M.D., Ph.D.**, a retreat planning committee of MCC members with varied research and clinical interests was established. In collaboration with MCC Senior Leadership, the committee developed a productive and thoughtful agenda intended to engage members in discussion.

2018 Retreat Planning Committee



Monica Guzman, Ph.D.
*Associate Professor of
Pharmacology in Medicine*



Heather Yeo, M.D.
Assistant Professor of Surgery



Vivek Mittal, Ph.D.
*Professor of Cell and Developmental
Biology in Cardiothoracic Surgery
Professor of Cell and Developmental
Biology*



Manish Shah, M.D.
*Bartlett Family Associate
Professor in Gastrointestinal
Oncology*

Dr. Cantley welcomed participants with an overview of key takeaways from the visit from NCI Director, **Norman “Ned” Sharpless, M.D.**, earlier in the year. Dr. Cantley also addressed Cancer Center Support Grant developmental priority areas in relation to the MCC's grant submission timeline. Supporting these priority areas were presentations from NYP Leadership, including Senior Vice President and Chief Strategy Officer, **Emme Deland**, and Dr. Formenti. Following this, a panel with the Chairs of Medicine, Radiology, Radiation Oncology, and Neurological Surgery discussed the opportunities and challenges that exist among emerging cancer centers.

One of these challenges can be the translation of research, not only from bench to bedside, but from bedside to bench. As part of an initiative to address this, proposals of clinically relevant research questions had been solicited from across the MCC with the goal of stimulating new, clinical research. **Manish Shah, M.D.**, who led the initiative, announced the four winning proposals.

The agenda concluded with brief presentations from each of the Research Program leaders on the advancement of the programs, including an overview of current program metrics and progress made towards specific aims and objectives.

2018 Meyer Cancer Center Retreat Agenda

Discussion Panel:

MCC/Departmental Partnerships & Collaboration

Moderated by Lewis Cantley, Ph.D.

Silvia Formenti, M.D.

*Chair, Department of Radiation Oncology
Associate Director of Radiation Oncology
Member, Solid Tumors Research Program*

Anthony Hollenberg, M.D.

Sanford I. Weill Chair of Medicine

Robert Min, M.D.

*Chair, Department of Radiology
Member, Solid Tumors Research Program*

Philip Stieg, M.D.

*Chair, Department of Neurosurgery
Member, Solid Tumors Research Program*

Clinical Genomics

Olivier Elemento, Ph.D.

*Director, Englander Institute for Precision Medicine
Co-Leader, Cancer Genetics, Epigenetics &
Systems Biology Research Program*

Care Pathways; DMT Goals; Network Standardization

David Nanus, M.D.

*Mark W. Pasmantier Professor of Hematology
and Oncology in Medicine
Associate Director of Clinical Services
Member, Solid Tumors Research Program*

Clinically Relevant Research Questions

Manish Shah, M.D.

*Bartlett Family Associate Professor in
Gastrointestinal Oncology
Member, Solid Tumors Research Program*

Research Programs Overview

Steven Lipkin, M.D., Ph.D.

*Co-Leader, Cancer Genetics, Epigenetics &
Systems Biology Research Program*

Timothy McGraw, Ph.D.

Leader, Cancer Biology Research Program

Nasser Altorki, M.D.

Leader, Solid Tumors Research Program

John Leonard, M.D.

*Associate Director for Clinical Trials
Member, Hematologic Malignancies Program*

Faculty Awards

Several MCC members were recognized for their significant contributions to their fields in 2018:

Manish Shah, M.D., received the Fellowship of ASCO Award from the American Society of Clinical Oncology (ASCO).

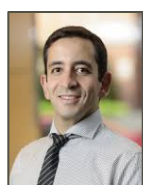
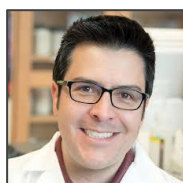


Karim Halazun, M.D., was selected to receive a Vanguard Award for the Best Clinical Paper by the International Liver Transplantation Society for his paper: "Recurrence After Liver Transplantation for Hepatocellular Carcinoma."

Jyotishman Pathak, Ph.D., was one of 18 fellows elected to the American College of Medical Informatics (ACMI). ACMI is an honorary college of elected informatics fellows from the United States and abroad who have made significant and sustained contributions to the field of medical informatics.



Julie Blander, Ph.D., Lewis Cantley, Ph.D., Juan Cubillos-Ruiz, Ph.D., Matthew Greenblatt, M.D., Ph.D., Steven Lipkin, M.D., Ph.D., and Shahin Rafii, M.D., each won a Daedalus Award for Innovation, which funds proof-of-concept studies. Of this year's eight awardees, six were Meyer Cancer Center researchers.



While still a postdoctoral fellow in the Cantley Lab, **Samuel Bakhoun, M.D., Ph.D.**, received a 2018 Tri-Institutional Breakout Prize for Junior Investigators.

Coordinated Care

Patients treated at NewYork-Presbyterian/Weill Cornell have access to a host of medical services that enhance and complement their cancer care. In 2018, our clinical program continued to grow with the recruitment of three additional faculty focused solely on cancer care. Also, in 2018, our hospital partner, NewYork-Presbyterian, opened a new ambulatory building, the David H. Koch Center, which features a multi-disciplinary breast cancer clinic on one entire floor. The year-end clinical volumes for the entire medical center totaled over 50,000 outpatient infusion visits, over 22,000 radiation therapy visits, and over 180 bone marrow transplants.



In 2018, the number of interventional clinical trials available to patients at MCC increased to over 540 trials. An additional 135 other clinical studies were available for patients to participate in.

Of all the available clinical studies, over 35% were initiated by MCC faculty and their collaborators. Participation in these studies remained high, helping move new treatments and other interventions closer to becoming approved as standard of care.

Some noteworthy discoveries and advances from such clinical research over the past year include the following:

- In a retrospective study of blood samples from the Women's Health Initiative, **Duane Hassane, Ph.D.**, **Pinkal Desai, M.D.**, and other members of our leukemia team found that genetic mutations for acute myeloid leukemia (AML) were present in blood samples at a median of 9.6 years prior to diagnosis of AML. The presence of detectable mutations years before diagnosis suggests that there is a period of latency that precedes AML during which early detection, monitoring and interventional studies should be considered.
- **Sandra Demaria, M.D.**, **Silvia Formenti, M.D.**, and colleagues reported that radiation therapy and CTLA-4 blockade induced systemic anti-tumor T cells in chemo-refractory metastatic non-small-cell lung cancer, where anti-CTLA-4 antibodies had failed to demonstrate significant efficacy alone or in combination with chemotherapy.
- **Steven Lipkin, M.D., Ph.D.**, found the first germline genetic mutation in multiple myeloma. This finding provides new insights into tumor suppression for multiple myeloma.

- A five-year follow up of phase 2 study of lenalidomide plus rituximab (LR) as initial treatment of mantle cell lymphoma (MCL) showed that LR continues to demonstrate durable responses and manageable safety as initial induction and maintenance therapy for MCL. These results were reported by a team led by **John Leonard, M.D.**, and **Jia Ruan, M.D.**
 - A population-based analysis led by **Adam Talenfeld, M.D.**, concluded that for older adults with stage T1a renal cell carcinoma, percutaneous ablation may result in similar oncologic outcomes, less long-term renal insufficiency, and markedly fewer periprocedural complications than the recommended alternative treatment option.
 - **Manish Shah, M.D.**, and colleagues' phase 1 study found that andecaliximab + mFOLFOX6 showed encouraging clinical activity without additional toxicity in patients with HER2-negative gastric/GEJ adenocarcinoma.
 - Through a unique assay, **Ari Melnick, M.D.**, revealed new insights into drivers of diffuse large B cell lymphoma, suggesting that inhibition of these drivers could prime lymphomas for immune recognition in a clinical setting.
 - Study findings from **Sarah Rutherford, M.D.**, **Ashish Saxena, M.D.**, **Kristy Richards, Ph.D., M.D.**, and **Doron Betel, Ph.D.**, will enable future studies of the role that extracellular vesicles may play in diffuse large B-cell lymphoma and may open a new strategy for disease monitoring via liquid biopsy.
-

Community Outreach

MCC members continue to run established cancer screening programs—notably in breast, lung, and prostate cancers—across the city, a smoking cessation program, cancer patient support groups, and survivorship events. The breast cancer survivorship program, led by **Anne Moore, M.D.**, continues to have strong participation at its annual symposium. In 2018, **Antonio Primo DeRosa** joined our efforts as our dedicated cancer librarian in the Myra Mahon Patient Resource Center to provide information to our cancer patients. He also formed a Patient and Family Advisory Council dedicated to patients who have received cancer treatment at MCC.

To expand and strengthen these outreach efforts, the MCC has partnered with the Cornell Center for Health Equity (CCHE). These joint efforts are led by **Erica Phillips, M.D., M.S.** Due to the prevalence of cancer disparities in Brooklyn, the MCC is working with our colleagues at NYP/Brooklyn Methodist to better understand the local cancer issues and engage these communities. We are also expanding our clinical trials infrastructure to be able to offer these treatment options to a wider patient population. In the coming year, we plan to make greater inroads in these efforts with the following objectives:

- Educate and support our cancer patients, survivors, and those at-risk for cancer
- Increase access to high-quality care
- Encourage healthy behaviors for cancer prevention that are reinforced by community support
- Increase cancer awareness and access to screenings



Notable Visit

Director of the National Cancer Institute

In March, the new Director of the National Cancer Institute, **Norman “Ned” Sharpless, M.D.**, spent a day at the MCC. Dr. Sharpless initiated this visit to learn more about ongoing key initiatives at the MCC, including our pursuit of NCI designation. Leadership from Weill Cornell, NewYork-Presbyterian, and the MCC spent the majority of the day presenting many aspects of our center, including the history and growth since the recruitment of Dr. Cantley. MCC Leadership also presented our patient catchment area, clinical trial activity, and research programs. The feedback from Dr. Sharpless was largely positive and helpful for NCI designation.

Dr. Sharpless concluded his visit with a seminar, speaking to faculty, staff and students in a packed Uris Auditorium. He shared his impressions as the new NCI director—he began his tenure in October 2017—and highlighted advances in precision medicine and immunotherapy that he is paying close attention to and the work the NCI is spearheading to drive new discoveries in cancer care. He also discussed the NCI’s efforts to support young investigators, especially young women.



Future Direction

In summary, there have been significant advances in the organization and productivity of the Meyer Cancer Center that continue to fulfill the Director's vision. By strengthening our infrastructure and support for our membership, we will maintain an impressive trajectory in cancer research and clinical care.

In the coming year, the Meyer Cancer Center will continue to focus on expanding expertise – basic research, clinical care and translational research – in thoracic oncology, breast oncology and tumor immunology. In 2018, we collaborated with the Department of Healthcare Policy and Research to search for a leader in population-based cancer studies to serve as Associate Director for Population Science in the Meyer Cancer Center and inaugural Division Chief of Population Science in Healthcare Policy and Research. A number of promising candidates have emerged and a focus for 2019 will be on expanding the breadth of a cancer population science program through recruitment of additional investigators.

One of the defining features of the Meyer Cancer Center is a research program structure that reflects our strongest basic, translational and clinical research while capturing our maximum extramural funding base. Through the Collaborative Research Initiative, we will continue funding innovative research projects to make them competitive for external funding. This will further expand the number of peer-reviewed research grants – both individual and multi-investigator – within each research program.

Clinical Disease Management Teams (DMTs), a critical clinical interface with the Research Programs, were established in collaboration with NYP. In 2019, the DMTs will have an expanded role in developing clinical trials emanating from scientific discoveries in the research programs and in initiating a new clinical protocol review and monitoring process.

In 2018, the focus of the Meyer Cancer Center catchment area – the geographic area and population that the cancer center serves – has been Manhattan and Brooklyn. NCI-designated cancer centers are charged with decreasing cancer incidence and mortality among populations within their catchment areas, including minority and underserved populations. Through a partnership with our colleagues at NYP/Brooklyn Methodist and the Cornell Center for Health Equity, the Meyer Cancer Center has begun to develop and implement community outreach and education programs. A robust survey of our catchment area is planned for 2019 that will facilitate identification of cancer issues and disparities that overlap with our strengths in basic, translational and clinical research.

One of the key components in serving the Meyer Cancer Center's catchment area is accruing patients of all demographics to clinical trials. We continue to partner with NYP/Brooklyn Methodist to establish a robust clinical trials infrastructure and enhance our culture of patient care. Our community outreach and engagement programs will be a critical component of providing high quality care and clinical trials to our patient population.

Finally, the growth and development of the Meyer Cancer Center depends upon the guidance of individuals with experience evaluating NCI designated cancer centers. These individuals provide advice on institutional commitment policies, planning & evaluation activities, catchment area definition, research program metrics, shared resource usage, clinical trial portfolio balance and educational/outreach programs. Following on the Meyer Cancer Center hosting Dr. Norman “Ned” Sharpless, Director of the National Cancer Institute, for a preliminary review of our structure and programs, a more detailed assessment of our center was conducted by a mini External Scientific Advisory Board comprised of leaders from NCI designated cancer centers – John DiPersio, Michelle LeBeau and Bill Nelson. The Meyer Cancer Center leadership will identify nationally recognized academic cancer experts to participate on a full External Advisory Board, with plans for a formal review meeting in early 2020.



Back Row (left to right): Emme Deland, M.B.A., Nasser Altorki, M.D., Olivier Elemento, Ph.D., Howard Fine, M.D., John Blenis, Ph.D., Barry Sleckman, M.D., Ph.D., Lewis Cantley, Ph.D., Dean Augustine Choi, M.D., Norman Sharpless, M.D., Steve Corwin, M.D., Steven Lipkin, M.D., Ph.D., Gary Koretzky, M.D., Ph.D., Timothy McGraw, Ph.D., Ari Melnick, M.D.

Front Row (left to right): John Leonard, M.D., Silvia Formenti, M.D., Julie Boyer, Ph.D., David Nanus, M.D., Andrew Dannenberg, M.D.