

# Exceptional Leaders in the Fight Against Cancer



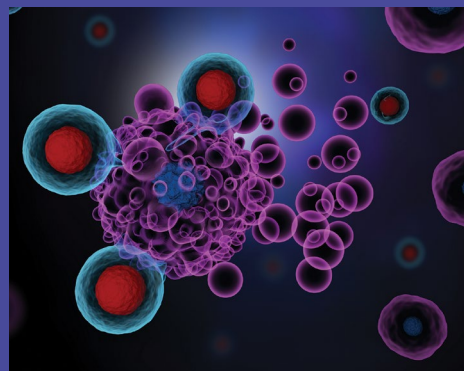
ROBERT H. LURIE COMPREHENSIVE CANCER CENTER OF NORTHWESTERN UNIVERSITY



# Our Mission



PROVIDE COMPASSIONATE,  
STATE-OF-THE-ART INDIVIDUALIZED  
CANCER CARE, AND ELIMINATE  
DIFFERENCES IN CANCER OUTCOMES  
AMONG POPULATION GROUPS,  
ALSO KNOWN AS DISPARITIES



ACCELERATE TRANSLATION OF  
GROUNDBREAKING DISCOVERIES  
TO DEFEAT CANCER



TRAIN THE NEXT GENERATION  
OF CLINICIANS AND SCIENTISTS



Dear Friends:

During these extraordinary times in our world, we need exceptional people to lead the way. At the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, our physicians, scientists, nurses, and devoted staff are doing just that. Guided by our mission, we are providing expert, compassionate care and support services to our patients, their families, and the broader community. Each day, we are working to reduce the burden of cancer for patients and increasing access to cutting-edge cancer information, prevention, screening, and treatment.

As a National Cancer Institute (NCI)-designated Comprehensive Cancer Center and part of a great academic medical center, we also are leading high-impact laboratory, translational “bench to bedside,” and clinical trial studies, as well as training a new generation of experts in oncology for the benefit and service of people facing cancer worldwide. Our mission has never been more urgent as we fight cancer in all of its forms.

In 2018, Lurie Cancer Center received the highest rating possible from the NCI, an overall “exceptional” on the competitive renewal of our Cancer Center Support Grant. In addition to receiving the highest rating in the history of any cancer center in Chicago for excellence in research programs and cancer care, Lurie Cancer Center received a near-perfect impact score of 12\*, which places us among the top five cancer centers in the country. In addition, we are proud to be a founding member of the National Comprehensive Cancer Network (NCCN), the elite group of institutions that sets the standards for cancer care. We are also the only member in Illinois.

Emboldened by these achievements, we are on a path to establish Lurie Cancer Center as a global leader in cancer care and research. As you will read, we have our eyes on the future with a blueprint to achieve our goals with the passion and daily commitment of our Lurie Cancer Center members, collaborators across Northwestern University and Northwestern Medicine, and our community of wonderful donors, advocates, and friends. **Our big, bold goal is to raise \$100 million in philanthropic dollars — all to bring our highly innovative research, training, and community impact efforts to the next level of “exceptional” for our patients in Chicagoland and worldwide.**

Please join me and our team on this journey by supporting this campaign for our future. On behalf of Lurie Cancer Center, thank you from the bottom of my heart for your trust and confidence in us.

With tremendous gratitude,

**Leonidas C. Platanias, MD, PhD**

Director, Robert H. Lurie Comprehensive Cancer Center of Northwestern University  
Jesse, Sara, Andrew, Abigail, Benjamin and Elizabeth Lurie Professor of Oncology



*“We are positioned among an elite group of top cancer centers in the country and poised for the next phase of growth. We look forward to expanding our capabilities and intensifying our efforts to defeat cancer as a disease.”*

—Leonidas C. Platanias, MD, PhD  
Director, Robert H. Lurie  
Comprehensive Cancer Center  
of Northwestern University

\*The NCI assigns numerical scores to centers on a unique scale that ranges from 10 to 90, with 10 being a perfect score.

# Exceptional for Our Future—Research

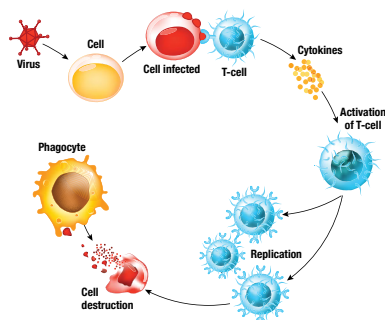
At Lurie Cancer Center, our physicians and scientists are transforming how we think about cancer. Research has always informed patient care and is our treasured asset for improving human health beyond the individual patient. In fact, there is nothing that touches a patient today that did not have its origin somewhere as a study in the laboratory or clinic. We are leading breakthrough research to better understand various forms of cancer, improve outcomes for patients, and create new inroads to a higher quality of life for patients living with and surviving cancer.

## Basic Science Cancer Research

To reach our bold goals for the future, we are dedicating our people, energies, and resources to four exciting basic science research areas that are growing and showing promise in the fight against cancer. We are focusing on the powerhouse techniques and tools of **Epigenetics**, **Immunology**, **Nanotechnology**, and **Metabolism** to target the most difficult questions in cancer and most significant barriers to progress. We believe these areas of study are key to advancing high-impact, high-return science ... all in the battle to overcome cancer.

### IMMUNOLOGY

*Advances in immunology have created a sea change in cancer treatment at Lurie Cancer Center today and for the future of treatment.*



Cancer cells develop in our bodies on a continuous basis, but our immune systems are able to detect and kill these cancer cells before they take hold. When the immune system fails in this surveillance, cancer grows undeterred. The study of this breakdown of the immune system is known as cancer immunology. Cancer immunotherapy is the treatment process in which the surveillance process of killing cancer cells is restored and where the immune system is turned back on.

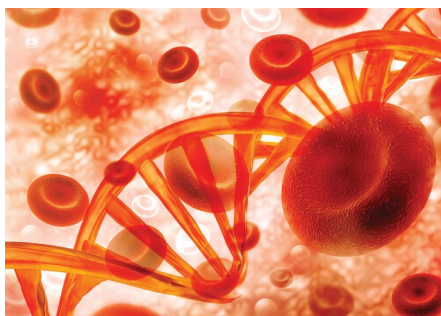
Cancer immunotherapy has not only improved the lives of many patients with melanoma, but also patients with lung cancer, kidney cancer, stomach cancer, head and neck cancer, liver cancer, and others. Many patients, however, remain largely refractory or treatment-resistant (breast cancer, colon cancer, and prostate cancer), and many patients with immune-sensitive tumors also do not respond or relapse when treated with immunotherapy.

At Lurie Cancer Center, cutting-edge immunology studies and immunotherapy treatments are major priorities and areas of investment for us because these new pathways are saving the lives of patients today and offering promise for the future as new knowledge emerges. Our immunology research efforts are leading us to a better understanding of the immune response, which is the key to more breakthroughs. Our recent advances in harnessing immune cells and regulating the immune system have proven efficacious as novel therapeutics. With CAR T-cell therapy, for example, a sample of the patient's cells are collected from their blood and the cells' surface modified to recognize the patient's tumor. We have built considerable strength in immunology and cell therapies and have plans to recruit additional scientific experts to Lurie Cancer Center so we can compete and contribute at the highest level in this flourishing field.



## EPIGENETICS

*Epigenetics is about our environment and the different “actors” that create genetic mutations that cause cancer.*

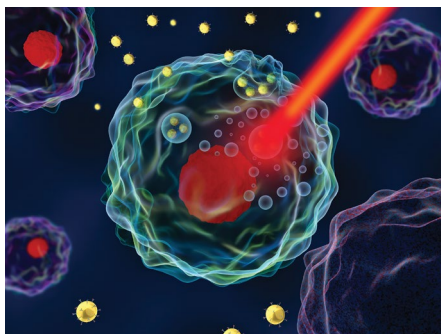


Through epigenetics, we are working at Lurie Cancer Center to develop new drugs to prevent the mutations that cause cancer. Epigenetics involves the mechanisms by which environmental factors—such as chemical exposure, obesity, diet, and exercise—regulate gene expression.

Recent studies of the cancer genome show that changes to epigenetic factors are key to the development of many forms of cancer and other diseases—putting epigenetics at the forefront of our biological studies. Northwestern investigators have definitively shown that such regulatory mechanisms underlay various cancers. Epigenetics offers, therefore, an entirely new opportunity to target drug therapy for selected cancers. In recent years, the Feinberg School of Medicine has invested significantly in the development of a transformative epigenetics program, including recruiting a renowned leader for the program and additional experts who have come from top institutions to make a difference.

## NANOTECHNOLOGY

*Our research programs in nanotechnology are internationally and nationally recognized and are moving the needle forward in the study and treatment of cancer.*



At Northwestern University, we are considered world leaders in the field of nanotechnology. Nanotechnology is often referred to as the science of small things. It is the study of the fabrication, directed self-assembly, and characterization of materials that have size dimensions between 1 and 100 nanometers. In the context of biological nanostructures, this is the size regime of the molecular machinery that constitutes human cells. We are accelerating this leading work at Lurie Cancer Center by developing novel treatments for cancer and leading clinical trials of drugs that use nanotechnology. We are employing nanotechnology to study and discover new immunotherapy approaches for various forms of cancer, such as prostate cancer, lymphoma, and leukemia among many others.

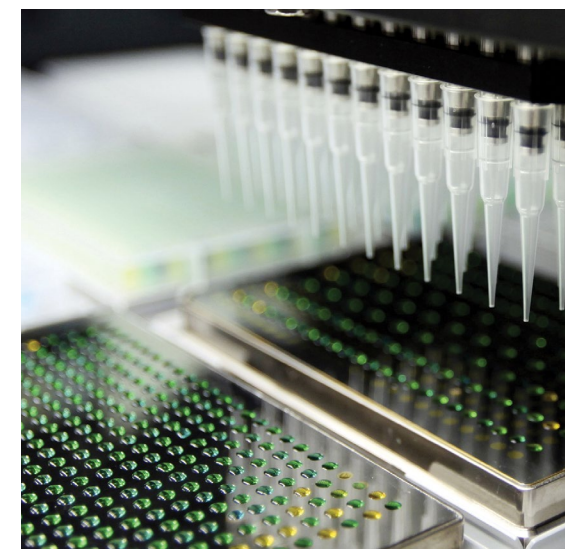
Nanotechnology offers new avenues in the treatment of cancer, including the means to target chemotherapies directly and selectively to cancerous cells and neoplasms, guide in surgical resection of tumors, and enhance the therapeutic efficacy of radiation-based and other current treatments. All of this can add up to a decreased risk to the patient and an increased probability of survival. The challenge and opportunity we have with nanotechnology is to manipulate structures that naturally interface with biological systems to develop specifically targeted, practical, safe, and effective small particle therapeutics.

**Why Our Lurie  
Cancer Center  
Members Keep  
Striving**



*“Is the Lurie Cancer Center a ‘better place’ for cancer care than it was 30 years ago?  
Of course. The irony of cancer care is that if you are ‘good’ but not ‘getting better,’ you’re not doing your job! And if you operate by this ever-evolving concept of ‘getting better,’  
HOPE is a constant.”*

— Ann Lurie

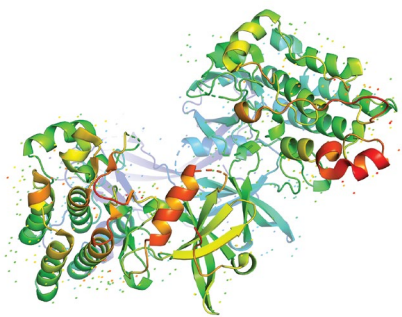




# Exceptional for Our Future—Research

## METABOLISM

*Lurie Cancer Center is intensifying its efforts in cancer metabolism as this research witnesses a remarkable renaissance.*



Metabolism is a rapidly growing area of study that is incredibly promising for cancer therapeutics. This science focuses on understanding how cancer cells operate differently than normal cells and why these cells keep growing so quickly. It has become clear that changes in metabolism represent a hallmark of the pathogenesis of many, if not all cancers. However, the underlying molecular mechanisms are not well understood, and consequently strategies for the rational development of therapeutics to target such metabolic adaption are only beginning to emerge.

At Lurie Cancer Center, there is vast opportunity to develop new drugs and other cancer therapeutics that work in many forms of cancer, including difficult to treat forms of lung and brain cancer. For example, mitochondria are the energy-producing factories of all cells. If we can remove the energy source that cancer cells use to power their attack on the body, we can stop cancer in its tracks.

## HOW WE WILL GET THERE

With the essential support of our donors, we will elevate and greatly strengthen these four priority basic science programs through:

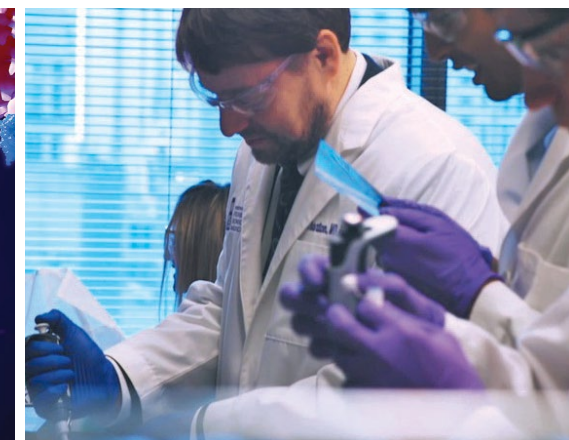
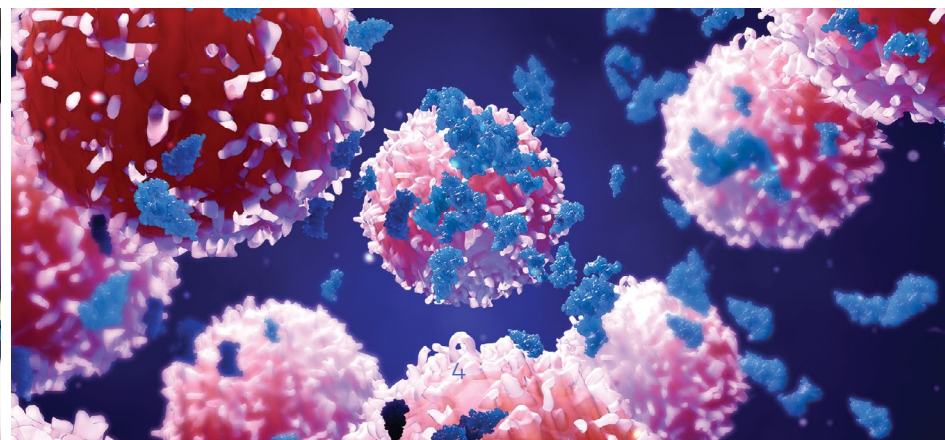
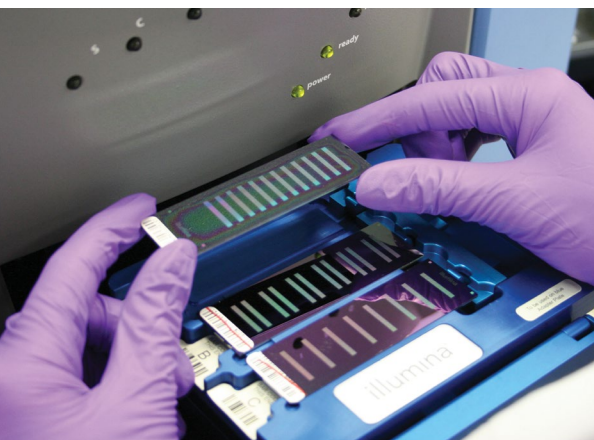
- ◆ Focused faculty recruitments
- ◆ New research initiatives led by our principal investigators
- ◆ High-impact, innovative technology transfer
- ◆ Investments in our shared research cores, such as our Immune Monitoring and Metabolomics cores

Why Lurie  
Cancer Center  
Embodies the  
Collaborative  
Spirit of  
Northwestern  
University



*“Lurie Cancer Center embodies the collaborative spirit of Northwestern University. It involves 400 faculty across 34 departments and four schools. The war on cancer benefits from an array of scholars guided by the Northwestern spirit of interdisciplinary cooperation.”*

— Morton Schapiro, President,  
Northwestern University





## Our Big, Bold Goals for the Future

DEVELOP NEW AGENTS THAT  
WILL CONTRIBUTE TO CURES  
FOR DIFFERENT TUMORS

ADDRESS CANCER DISPARITIES  
IN CHICAGO

## Translational Cancer Research

At Lurie Cancer Center, our translational research programs are integral to the future of cancer discovery and care. Translational studies help us move new ideas and treatments from our laboratories to the clinic, while also driving new insights and knowledge from the clinic to the laboratory for further investigation.

Looking forward, our strategic growth areas for translational research at the cancer center will focus on solid tumors and hematologic malignancies, including brain tumors, prostate cancer, breast cancer, ovarian cancer, leukemia/myeloproliferative neoplasms, and lung cancer. To heighten our translational studies and improve outcomes for patients with these forms of cancer, we are mobilizing our current SPOREs and working with rigor to prepare to apply for new SPOREs in high-impact areas. SPOREs, or Specialized Programs of Research Excellence, are transformational funding awards from the National Cancer Institute that fuel large-scale research efforts and help provide a maximum impact in the shortest timeframe possible.

We are leading two prestigious SPOREs, a Prostate Cancer SPORE and Brain Cancer SPORE, that were awarded to Lurie Cancer Center. Ours are the only two cancer SPOREs in Chicago and a point of pride for us.

### WHY SPORES ARE SO IMPORTANT

To receive a SPORE from the National Institutes of Health, a cancer center must already have major strengths in basic science and clinical research in that specialty area. SPOREs further elevate our programs and promote a team science approach, coalescing basic scientists and clinicians to conduct interdisciplinary research that is designed to identify novel therapies for our patients. Such interdisciplinary programs at Lurie Cancer Center include tumor immunotherapy, precision medicine within our OncoSET program, and the application of nanotechnology to cancer.

Our 400 members conduct groundbreaking laboratory, clinical, prevention, behavior, and population-based investigations to spur innovative clinical trials and provide cutting-edge treatment options that often are not available elsewhere.



With our basic science and translational research programs and growing clinical network through Northwestern Medicine, we are ready to take our translational programs to the next level of “exceptional.” We are seeking donor investment to help expand our multi-investigator translational research studies, and increase the momentum of our programs in breast cancer, ovarian cancer, leukemia/MPN (myeloproliferative neoplasms), and lung cancer specifically so we can successfully compete for and receive multimillion dollar SPORE awards in these priority areas.



## Exceptional for Our Future—Community Impact



### Upward and Onward: Over the Past Five Years at Lurie Cancer Center

- ◆ Our National Institutes of Health research **funding has nearly doubled**
- ◆ **Enrollment** in our clinical trials has **more than doubled**
- ◆ We have recruited more than **120** new faculty members

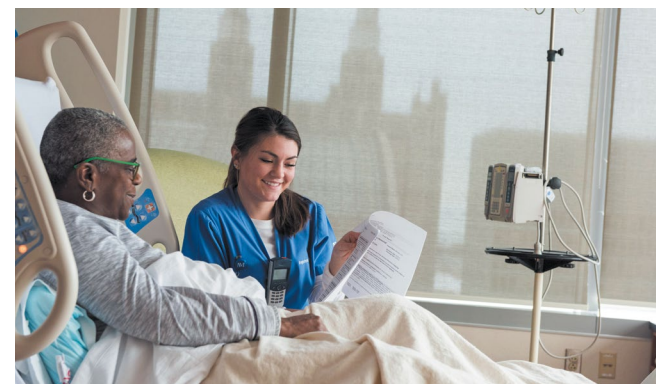
At Lurie Cancer Center, our community is everything to us and is central to our mission. We have a deep history of advocacy, education, and outreach and engagement and are leading initiatives that have an impact on health and well-being in the communities we serve and beyond. As we look forward, we are enhancing our community partnerships and programs to better identify and address barriers to cancer health equity and to help improve outcomes in traditionally underserved neighborhoods.

#### WORKING TOGETHER WITH NEW AND EXISTING ORGANIZATIONS IN OUR COMMUNITIES, OUR EFFORTS INCLUDE:

- ◆ Expanding awareness and improving access to cancer services, treatment, and clinical trials
- ◆ Providing up-to-date information and community-based screening programs to reduce cancer risk and increase early detection
- ◆ Identifying the social and economic challenges in underserved neighborhoods to guide our efforts
- ◆ Developing educational resources to improve health literacy and raise awareness about follow-up and survivorship care
- ◆ Advocating for public policy changes to ease the burden of cancer
- ◆ Supporting healthy lifestyle changes to reduce cancer risk

#### WE ARE GRATEFUL FOR OUR COMMUNITY PARTNERSHIPS AND COLLABORATIONS, INCLUDING:

- ◆ **Chicago Cancer Initiative:** A collaborative effort to eliminate cancer health disparities and improve outcomes on every block of the Chicago metropolitan area by engaging community, philanthropic, and community leaders.







Through our work in the Chicago Cancer Initiative, we are targeting serious health issues that often stem from health disparities. Currently, Chicago's Bronzeville community has six times the incidence and death rate of major cancers, including breast cancer and prostate cancer. Lurie Cancer Center is working in deep partnership with the Chicago Cancer Initiative and members of the Bronzeville community to address these unacceptable rates of breast and prostate cancer and losses of life.

- ✦ **Chicago Cancer Health Equity Collaborative (ChicagoCHEC):** A National Cancer Institute-funded initiative, ChicagoCHEC enables Lurie Cancer Center, University of Illinois at Chicago, and Northeastern Illinois University to collaborate with many of the city's underserved communities to foster meaningful cancer research, education, training, and community engagement.
- ✦ **Illinois Comprehensive Cancer Control Plan:** A state-based initiative funded by the Centers for Disease Control and Prevention that enables Lurie Cancer Center to work in collaboration with organizations throughout the state to develop a cancer control plan focused on the types of cancer unique to local communities that have the highest burden.
- ✦ Educating the public, patients, and caregivers is a vibrant part of our mission. Each year, Lurie Cancer Center conducts a wide range of **public education programs and survivorship events**. In addition, we bring together thousands of people each year to participate in our annual **Cancer Survivors' Celebration & Walk**.

Looking to the future, our overarching goal in service to our communities is to improve cancer screening rates through education and increased access. Ultimately, we are endeavoring to decrease the incidence and mortality of the top three cancers — lung, prostate, and breast — over the next decade. We will achieve these aims by focusing on these programs and efforts:

#### STRATEGIC GROWTH PROGRAMS

LUNG CANCER PREVENTION

BRAIN TUMORS PREVENTION

BEHAVIORAL INTERVENTION AND IMMUNO/METABOLISM

PATIENT OUTCOMES RESEARCH

EXPANDING OUTREACH AND SCREENING ACROSS CHICAGO

Why Our Lurie Cancer Center Patients Are Exceptional



*"As an oncology nurse, I have spoken glowingly to patients often about the amazing team at Lurie Cancer Center. To witness this team's support, for me — as a patient — words cannot describe my gratitude. Thank you."*

— Kanesha Broadwater, BSN, RN, OCN



# Exceptional for Our Future—Education and Training

At our very core, Lurie Cancer Center is deeply committed to the training of medical students and residents, as well as fellowship trainees who work across a range of specialties that intersect with the field of oncology. The time and expense to prepare our next generation of experts in cancer is immense, yet the investment is essential as these trainees represent our future caregivers, scientists, leaders, and innovators.

At Lurie Cancer Center, more than 1,200 residents and fellows train with our faculty clinicians, conduct novel research with the supervision of our faculty, and develop the competencies and skills to communicate effectively with patients and families. Feinberg medical students also benefit from significant hands-on experiences in our clinics and other settings with our teams.



## WHY TRAINING IN THE FIELD OF CANCER IS SO IMPORTANT

Cancer represents a very complex set of diseases that requires team care and team science, as well as a highly individualized and compassionate approach to care. Individuals who choose oncology as a career path must be prepared to collaborate frequently with all medical specialties and must also have a strong knowledge of and foundation in the basic sciences, engineering, communications, and newer fields, like augmented intelligence. In addition, they must be strong and effective communicators and leaders when it comes to advocating for patients, setting new guidelines in the field, and communicating with the public about new therapies, treatments, and breakthroughs in cancer. Our training programs and our faculty, through their mentoring and sharing of knowledge, target these important needs for our trainees and prepare them well for the future.

Supporters of Lurie Cancer Center invest in our education and training efforts because they care about the future of cancer prevention, diagnosis, treatment, and survivorship for people everywhere. They want to help us ensure that the best people are in place to lead into the future.

We invite our donors and friends to support fellowship training, in particular, as well as novel educational programs that truly set us apart nationally.

## TRANSLATIONAL BRIDGE PROGRAM

Through our successful Translational Bridge Program, we are building bridges between basic and clinical investigators and are fostering both research, as well as the education, of a new generation of translational investigators. Bridge awards enable research fellowship trainees to benefit from the mentorship and oversight of a laboratory's principal investigator, as well as the oversight of a clinical-investigator active in the patient care setting. This dual supervision and mentoring is a requirement for the continuous funding of these research fellows and results in the formation of powerful translational teams.

Through this program, which takes place on our Chicago and Evanston campuses, we identify and select high-risk, high-reward projects that have potential to lead to new clinical applications for cancer patients. Made possible by donor support, this innovative Lurie Cancer Center program has trained more than 25 Bridge fellows.

## Why Our Lurie Cancer Center Matters



*“As one of the nation’s truly exceptional programs, Lurie Cancer Center is driving high-impact research and innovative training for the benefit of better clinical care. More discovery means more progress, and it can’t go faster without more fuel.”*

— Eric G. Neilson, MD, Vice President for Medical Affairs and Lewis Landsberg Dean, Northwestern University Feinberg School of Medicine

## ACADEMY FOR CANCER MEDICINE

As a leading cancer center in the country, we have a mandate and a mission to continually innovate and evolve our training and mentorship programs to best prepare the next generation of clinicians, scientists, and leaders in oncology. The rapid evolution of science has had a major impact on clinical oncology care and has resulted in major breakthroughs for some types of cancer. At the same time, the rapid growth of the field has resulted in unusual and unexpected challenges in the education and training of young doctors who are pursuing careers in the cancer field.





The traditional pre-graduate, graduate, and post-graduate medical training is not preparing them for the emerging complex scientific, legal, and innovation issues that are re-defining clinical cancer care. It also does not promote business and legal understanding relevant to their abilities to innovate.

With the full commitment of colleagues across both campuses of Northwestern University and the participation of virtually every school and college, we are proposing the creation of an Academy for Cancer Medicine. Through the Academy, we will transcend traditional boundaries in medical education, setting a new pace and standard for 21st century training in oncology. The vision is to train new world oncologists who are educated in the panoply of disciplines relating to cancer and beyond. We recognize the need and demand for education and training in medicine, particularly in oncology, that is not linear but is rather multi-dimensional, sophisticated, and interconnected.

### The following professionals in the field come to mind as examples:

- ✦ A clinician engineer working on new products
- ✦ A computer science physician studying augmented intelligence
- ✦ A doctor economist studying the healthcare system
- ✦ A surgeon engineer designing new devices
- ✦ A doctor educator at the cutting edge of new communication and patient-education approaches
- ✦ A physician journalist reporting on disease prevention and new therapeutics to lay people
- ✦ A physician MBA who is an expert on healthcare quality measures
- ✦ A cancer researcher who is a national policy change agent and leader
- ✦ A physician attorney who represents and advocates for patients

We can put people and programs in place to ensure the Academy's success for the benefit of our medical students, residents, fellows, and young faculty in the field of oncology. Lurie Cancer Center, which bridges Northwestern University and Northwestern Medicine, will serve as the anchor for the Academy and help to set and define its vision and the structure. Through the Academy, we will create a supportive intellectual and educational environment at Northwestern that will continue to evolve and reinvent itself based on the trajectory and demands of the field of oncology.



### Why Our Lurie Cancer Center Patients Are Exceptional



*"My care team never made me feel like just another adolescent/young adult (AYA) patient. They actually didn't make me feel like a patient at all—they made me feel like a normal human during the least normal, human time in my life."*

— Valerie Jonkoff

### PHILANTHROPIC PRIORITIES

A total **\$100 million** philanthropic investment will help establish Northwestern as the leader in cancer research:

**\$50 million**  
for faculty recruitment and career development

**\$30 million**  
for named institutes

**\$10 million**  
for education and training

**\$10 million**  
for community outreach programs



Exceptional...

## Robert H. Lurie Comprehensive Cancer Center of Northwestern University

For more information about supporting the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, please visit:

[cancer.northwestern.edu](http://cancer.northwestern.edu)