CRI Cancer Research Institute™

2026 CRI INVESTIGATORS

Clinic & Laboratory Integration Program and Technology Impact Awards

Uniting for a World Immune to Cancer

A Letter from Our CEO

At the Cancer Research Institute, we believe the future of cancer treatment lies at the intersection of **People × Biology × Data**. Transforming bold scientific ideas into lifesaving immunotherapies requires not only visionary researchers, but also the technologies, models, and translational strategies that move discovery from the laboratory to the clinic.

That vision comes to life through two complementary funding programs: the **CRI Clinic and Laboratory Integration Program (CLIP)** and the **CRI Technology Impact Award**. Together, these programs accelerate every stage of innovation—from developing the powerful tools that expand our understanding of the immune system to translating those insights into therapies that have the potential to improve patients' lives.

This year's CLIP investigators are translating bold discoveries into new therapeutic strategies. Their projects span a wide range of approaches—including cancer vaccines, adoptive T cell therapies, and innovative solutions to overcome immunotherapy resistance—all driven by a shared commitment to developing more effective treatments for patients with urgent unmet needs.

The 2026 Technology Impact Award investigators are creating transformative platforms, computational approaches, and experimental models that will deepen our understanding of tumor-immune interactions and equip researchers with entirely new ways to study and treat cancer. From targeted mRNA libraries and AI-powered predictive tools to comprehensive immune mapping technologies, their work will strengthen the scientific foundation on which future breakthroughs are built.

I am proud to announce the 2026 CRI CLIP Investigators and Technology Impact Awardees. Together, these exceptional investigators represent the ingenuity, collaboration, and determination that continue to propel cancer immunotherapy forward. We are honored to support their work and deeply grateful to the donors and partners whose generosity makes this progress possible.

With gratitude,

Alicia Zhou, PhD
Chief Executive Officer
Cancer Research Institute

Clinic & Laboratory Integration Program

The Cancer Research Institute (CRI) Clinical & Laboratory Integration Program (CLIP) is designed to accelerate the translation of promising scientific findings into real-world cancer treatments. Since its launch in 2012, CLIP has empowered innovative investigators working at the vital crossroads of laboratory and clinical research, where fundamental insights into cancer immunology can be transformed into therapies that directly benefit patients.

By funding projects that explore the dynamic interplay between lab-based research and clinical application, CLIP ensures that new breakthroughs don't remain confined to the lab. Instead, these ideas are tested, refined, and brought into the clinic to address urgent questions about how and why immunotherapies work in specific patient populations. CLIP also supports research that brings insights from clinical observations back into the lab, helping to uncover the mechanisms that drive treatment response or resistance.

To date, CRI's CLIP includes 142 scientists from 84 organizations in 23 U.S. states and 13 countries in Asia, Australia, and Europe. New awards of $300,000 are made annually, with a total of $35+ million invested so far. With the 2026 CLIP awards, CRI is investing in the future of immunotherapy – one that is smarter, faster, and more deeply informed by science.

CLIP Investigator

Nina Bhardwaj, MD, PhD

Icahn School of Medicine at Mount Sinai

Defining vaccine-induced immunity against mutated Calreticulin in myeloproliferative neoplasms

Relevance:
Blood Cancers

Project Summary:

Therapeutic cancer vaccines are an exciting new form of immunotherapy designed to train the immune system to recognize and attack cancer cells. While recent clinical trials have shown promising results, these vaccines have been most successful in patients whose tumors were surgically removed before treatment. This creates a major challenge for patients with blood cancers, who often live with ongoing disease and may never reach a cancer-free state. New strategies are urgently needed to determine whether cancer vaccines can work effectively in patients with active disease.

This project focuses on myeloproliferative neoplasms (MPNs), a group of blood cancers that can progress into an aggressive form of leukemia with a survival time of less than six months. Many MPN patients carry mutations in a protein called calreticulin (CALR), which drives cancer growth. Current treatments rarely eliminate the malignant stem cells responsible for the disease, meaning patients remain at risk for progression even after therapy.

Dr. Bhardwaj and her team have launched a clinical trial testing a vaccine designed to target the mutated form of CALR, intended to stimulate the immune system to recognize and destroy cancer cells carrying this mutation. They will evaluate whether vaccination can reduce the number of cancer cells in patients, improve blood counts, and generate strong immune responses involving both T cells and antibodies. The team will also study why immune responses may weaken over time, including mechanisms of immune exhaustion and suppression.

This work could provide critical proof that therapeutic vaccines can directly alter the course of blood cancers and help guide the development of more effective combination immunotherapies in the future.

CLIP Investigator

Margaret Callahan, MD, PhD

University of Connecticut School of Medicine

Regulatory T cell programming is a key determinant of response to anti-PD-1+anti-LAG-3 therapy

Relevance:
Melanoma

Project Summary:

Immunotherapy has transformed the treatment of advanced melanoma, the deadliest form of skin cancer, by helping the immune system attack cancer cells. New combinations of immune checkpoint therapies have improved survival for many patients, but only about 30–60% experience lasting benefit. At the same time, these treatments can cause serious side effects and are extremely costly. Currently, doctors have no reliable way to predict which therapy is most likely to work for an individual patient, meaning treatment decisions are often based on trial and error.

Dr. Callahan seeks to solve that problem by developing blood-based biomarkers that can help guide treatment selection for patients with advanced melanoma. Her team has spent more than a decade studying how patients respond to immunotherapy and has already identified biomarkers linked to resistance to PD-1 therapy, one of the most widely used forms of immunotherapy. The team has also discovered a new biomarker related to the behavior of regulatory T cells, specialized immune cells that normally help control immune responses but can also suppress the body's ability to fight cancer.

Successful treatment with the increasingly common combination therapy targeting PD-1 and LAG-3 may depend on shifting these regulatory T cells into a less suppressive, more active state. In this study, she will validate this biomarker in large groups of melanoma patients and investigate the biological mechanisms behind it. Her team will also combine this marker with other known predictors of response to create a more complete framework for personalized treatment decisions.

This work could help doctors match patients to the most effective immunotherapy while reducing unnecessary toxicity, improving outcomes, and making cancer care more precise and cost-effective.

CLIP Investigator

Christian Hinrichs, MD

Rutgers Health

On-demand cytokine support to enhance adoptive T cell therapy

Relevance: :
Solid Tumors

Project Summary:

Adoptive T cell therapy, a treatment that uses a patient's own immune cells to fight cancer, has shown remarkable success in some blood cancers and has the potential to transform cancer care. However, in most solid tumors, these therapies are far less effective. One major challenge is that the transferred T cells often lose strength and persistence after entering the body because they do not receive enough of the immune-supporting signals they need to survive and continue attacking cancer.

One of the most important of these signals is a natural immune protein called interleukin-2 (IL-2), which helps T cells grow and remain active. While IL-2 can be given as a drug, it spreads throughout the entire body, stimulating many immune cells indiscriminately and causing severe, sometimes life-threatening side effects.

Dr. Hinrichs' research seeks a safer way to provide this critical support only to the therapeutic T cells. His project introduces an innovative solution: a built-in "on-demand" support system engineered directly into the cancer-fighting T cells. He and his team have created a molecular switch, called a "ligaceptor," that stays inactive until triggered by a small-molecule drug. Once activated, the switch delivers IL-2-like support specifically inside the engineered T cells, helping them expand and persist without overstimulating the rest of the immune system. Early studies have already shown strong and controllable effects in human T cells.

Dr. Hinrichs will now test this approach in tumor models and develop additional switches that deliver other supportive signals. If successful, this work could make T cell therapies safer, more precise, and more effective for patients with solid tumors.

CLIP Investigator

Suzanne Lentzsch, MD, PhD

Columbia University in the City of New York

Bispecific phagocyte engagers for AL amyloidosis precise immunotherapy

Relevance:
Blood Cancer, Multiple Myeloma, Rare Cancers

Project Summary:

AL amyloidosis is a rare but devastating complication of multiple myeloma that can rapidly lead to heart and kidney failure. In this disease, abnormal plasma cells produce defective antibody fragments that misfold and build up as toxic amyloid deposits in vital organs. Even when current therapies successfully slow or stop production of these harmful proteins, the existing amyloid remains in the body and continues to damage organs. For patients with advanced disease, survival is often measured in months, highlighting the urgent need for therapies that can actively remove amyloid deposits.

Dr. Lentzsch's project builds on earlier work that led to the development of anselamimab, one of the first antibodies designed to bind directly to AL amyloid and help immune cells clear it from the body. While promising, this treatment benefited only patients with one subtype of the disease, known as kappa (κ) amyloidosis. Unfortunately, about 80% of patients have the lambda (λ) form, leaving most patients without an effective option.

She and her team have identified key reasons why amyloid clearance has been difficult and developed a new approach called Bispecific Phagocyte Engagers (BiPEs). These engineered molecules are designed to directly connect amyloid deposits with the immune cells responsible for removing harmful material from the body, allowing for more efficient clearance even in the presence of normal antibodies in the bloodstream.

They will now extend this strategy to the much more common λ form of AL amyloidosis. If successful, this work could lead to first-in-human clinical testing for the majority of AL amyloidosis patients and open the door to new treatments for other protein-aggregation diseases as well.

CLIP Investigator

Hind Rafei, MD

The University of Texas MD Anderson Cancer Center

Splicing isoform-directed Cas13 reprogramming of CAR-T cells for solid tumor immunotherapy

Relevance:
Solid Tumors

Project Summary:

CAR T-cell therapy, which engineers a patient's own immune cells to recognize and attack cancer, has produced extraordinary results in some blood cancers. However, this approach has been far less successful against solid tumors. One major reason is that solid tumors create a harsh environment that gradually weakens the engineered T cells, causing them to become "exhausted" and lose their ability to multiply, survive, and continue fighting the cancer.

Dr. Rafei's research focuses on a key molecular control system inside T cells called CREM, which helps determine whether T cells remain active or become exhausted. CREM exists in many different forms, known as isoforms, and these forms can have very different effects on immune function. Current gene-editing approaches typically remove CREM broadly, which risks eliminating forms that may help T cells function properly.

Dr. Rafei aims to develop a much more precise strategy by selectively blocking only the harmful CREM isoforms while preserving beneficial ones. To do this, she will use an advanced gene-targeting technology called Cas13, which can precisely target specific RNA molecules inside cells. Her team will first identify which CREM isoforms drive T-cell exhaustion under conditions that mimic solid tumors. They will then engineer CAR T cells with selective Cas13 programs and test whether these enhanced cells survive longer, remain more active, and control tumors more effectively in advanced preclinical models. If successful, this work could lead to a new generation of CAR T-cell therapies capable of treating solid tumors more effectively and establish a broadly applicable strategy for improving immune cell therapies through highly precise genetic control.

CLIP Investigator

Joshua Veatch, MD, PhD

Fred Hutchinson Cancer Center

Development of CD4+ T cell therapies targeting human papillomavirus-driven malignancies

Relevance:
Cervical Cancer, Head and Neck Cancer

Project Summary:

Human papillomavirus (HPV) causes thousands of cases of cervical cancer and head and neck cancer each year. Although HPV-driven cancers carry viral proteins that should make them visible to the immune system, many patients with advanced disease do not respond well to current immunotherapies. There is an urgent need for new approaches that can help the immune system better recognize and destroy cancer cells.

Dr. Veatch aims to develop a new type of cell-therapy approach that focuses on CD4 T cells, a critical part of the immune system that helps coordinate broader immune attacks against cancer. Most current cell therapies have concentrated on CD8 T cells, which primarily kill cancer cells directly. In contrast, CD4 T cells may offer an additional advantage by activating and strengthening other immune cells within the tumor environment, potentially overcoming resistance to current treatments.

To create this therapy, he and his team will identify naturally occurring immune receptors that recognize HPV proteins and use them to engineer CD4 T cells that can specifically target HPV-driven tumors. These engineered cells will then be tested in sophisticated preclinical models designed to closely mimic how human immune cells behave in cancer. The team will also explore strategies to further improve the therapy's effectiveness.

The ultimate goal of this work is to lay the foundation for a new immunotherapy for patients with HPV-related cancers. This research could expand treatment options for patients with advanced disease and help pave the way for future clinical trials.

CLIP Investigator-Alternate

Deric Wheeler, PhD

University of Wisconsin–Madison

EphA2–DDR1 axis promotes collagen remodeling and immune exclusion in head and neck cancer

Relevance:
Head and Neck Cancer

Project Summary:

Head and neck cancer is a devastating disease that is becoming increasingly common worldwide. Although immunotherapy has transformed cancer treatment by helping the immune system recognize and attack tumors, these therapies are effective in only a small percentage of head and neck cancer patients. Nearly 85% of patients do not benefit, leaving many with limited treatment options. Understanding why these cancers resist immunotherapy is one of the most urgent challenges in the field.

Dr. Wheeler's research focuses on a protein called EphA2, which is found at high levels in most head and neck cancers. His team has discovered that EphA2 helps tumors hide from the immune system in two important ways: First, tumors with high EphA2 levels contain fewer immune cells capable of killing cancer and more cells that suppress immune responses. Second, EphA2 helps tumors build a dense collagen barrier around themselves, which acts like a protective shield, physically blocking immune cells from entering the tumor and reducing the effectiveness of immunotherapy.

In laboratory and animal studies, blocking EphA2 breaks down this barrier and allows immune cells to reach and attack the tumor more effectively. Dr. Wheeler plans to investigate how EphA2 and a related protein called DDR1 work together to control collagen and immune cell access, while also testing new treatment combinations and studying patient tumor samples.

This work could lead to powerful new strategies that make immunotherapy effective for far more patients and lay the groundwork for future clinical trials.

Technology Impact Awards

The Cancer Research Institute (CRI) Technology Impact Award accelerates innovation by supporting the development of novel technologies that advance cancer immunotherapy. New scientific discoveries increasingly rely on the ability to generate, analyze, and interpret complex biological data. This award provides seed funding to foster collaboration between technology developers and clinical immunologists – uniting expertise in engineering, data science, and biology to unlock deeper insights into the immune system's role in cancer.

By investing in high-risk, high-reward ideas, CRI is laying the groundwork for transformative breakthroughs. Awardees are pioneering tools and approaches that not only expand the frontiers of cancer research, but also enhance clinical decision-making and accelerate the delivery of cures to patients. Since 2017, 44 Technology Impact Awards have been granted across 35 organizations in 18 U.S. states and 8 countries in Asia, Australia, and Europe. New awards of $300,000 are made annually, with a total of $12+ million invested to date.

The 2026 Technology Impact Awards reflect CRI's continued commitment to harnessing the power of data and innovation to solve cancer through immunotherapy – faster, smarter, and with greater impact.

Technology Impact Award Investigator

Michael Birnbaum, PhD

Massachusetts Institute of Technology

Polyclonal TCR-T therapy enabled by scalable synthesis of tumor-reactive TCR libraries

Relevance:
Bladder Cancer, Lung Cancer, Melanoma

Project Summary:

Many successful cancer immunotherapies depend on T cells — immune cells capable of recognizing and attacking tumors. However, tumors contain thousands of different T-cell populations, and scientists still struggle to determine which T cells are truly cancer-fighting and which are ineffective bystanders.

This challenge limits the development of personalized immune therapies because patient samples are often exhausted during testing, leaving little material available for deeper analysis.

Dr. Birnbaum's team has developed a new technology called TCRAFT that may solve this problem. TCRAFT allows researchers to rapidly rebuild and test thousands of patient-derived T-cell receptors (TCRs) in parallel without consuming precious clinical samples.

In this study, they will use both melanoma patient samples and tumor models to identify the TCRs most effective at recognizing cancer cells. They will then use these receptors to develop a new type of personalized cell therapy that more closely reflects the natural diversity of anti-tumor immune responses.

The long-term goal is to create streamlined, patient-specific TCR therapies that combine the breadth of naturally occurring immune responses with the precision and scalability needed for clinical use.

This work could significantly improve the ability to identify and harness the most powerful tumor-fighting T cells, advancing the development of more effective personalized cancer immunotherapies.

Technology Impact Award Investigator

Brian Brown, PhD

Icahn School of Medicine at Mount Sinai

Targeting RNA-LNP to boost cancer vaccine immunity

Research focus:
All Cancers

Project Summary:

Adoptive T cell therapy, a treatment that mRNA technology has emerged as a powerful new approach for cancer treatment by teaching the immune system to recognize and attack tumors. However, one major limitation remains: current delivery systems cannot control which cells receive the mRNA. As a result, many unintended cell types can produce the therapeutic proteins, reducing effectiveness and increasing side effects.

Dr. Brown's research aims to solve this problem by developing highly targeted mRNA delivery systems that direct treatments to the immune cells needed to fight cancer while preventing unwanted activity in other tissues.

He and his team will combine two innovative technologies to this end. The first uses short genetic sequences that function like molecular "off switches," preventing mRNA activity in certain cell types. The second uses specially engineered antibodies to guide mRNA-containing lipid nanoparticles directly to selected immune cells.

Early studies have shown promising results: reducing mRNA activity in liver cells improved anti-tumor immune responses while lowering liver-related toxicity.

Dr. Brown will build a library of targeted mRNA delivery systems and test their ability to improve cancer vaccines and immune cell therapies, including CAR T-cell treatments, in both blood cancers and solid tumors.

If successful, this work could lead to safer and more effective mRNA-based immunotherapies with greater precision, stronger anti-cancer responses, and fewer side effects.

Technology Impact Award Investigator

Peter Bruno, PhD

University of California, San Francisco

Next-generation cancer vaccines through AI-guided MHC-II functional genomics

Relevance:
All Cancers

Project Summary:

Cancer vaccines are designed to train the immune system to recognize and destroy tumors. While many vaccine strategies focus on activating "killer" CD8 T cells, another group of immune cells called CD4 helper T cells plays a critical role in sustaining long-term anti-cancer immunity and improving responses to immunotherapy.

To activate CD4 T cells, tumors must display small protein fragments on molecules called MHC class II (MHC-II). However, scientists still do not know which tumor fragments are most effectively displayed across the thousands of MHC-II variants found in different people. As a result, many cancer vaccines rely heavily on prediction rather than direct evidence, limiting their effectiveness.

Dr. Bruno's project seeks to replace this trial-and-error process with a more precise and data-driven strategy. Using a high-throughput experimental platform, he will directly test large numbers of tumor-derived protein fragments across common MHC-II variants to identify which ones most effectively stimulate CD4 T-cell responses.

Simultaneously, Dr. Bruno will develop advanced artificial intelligence models that learn from these experimental results to improve future predictions. The system will continuously refine itself by combining laboratory testing with machine learning.

This work could dramatically improve the design of cancer vaccines by enabling more accurate and personalized targeting of helper T cells, ultimately leading to stronger, longer-lasting anti-tumor immune responses.

Technology Impact Award Investigator

Jie Luo, PhD

Purdue University

Whole-body immune cell mapping platform for understanding immunotherapy resistance

Relevance:
Colorectal Cancer

Project Summary:

Immunotherapy has transformed cancer treatment for some patients, but many patients with metastatic colon cancer still do not experience lasting benefit. One major reason is that tumors spread throughout the body unevenly, creating very different immune environments in different organs. While some tumors are filled with active immune cells, others remain "immune-cold," meaning they successfully hide from immune attack.

Scientists currently lack tools to visualize these differences across the entire body at once, making it difficult to understand why some metastatic tumors resist treatment while others respond.

Dr. Luo is developing a groundbreaking technology called "wildDISCO-immunomics" to solve this problem. His approach uses advanced tissue-clearing methods to make entire organisms transparent, allowing researchers to create detailed three-dimensional maps of immune cells and metastatic tumors throughout the body.

By combining this technology with advanced imaging, immune staining, robotics, and artificial intelligence, Dr. Luo will identify which tumors remain immune-cold and analyze the molecular signals that allow them to evade the immune system.

The ultimate goal is to discover new treatment combinations capable of turning resistant tumors into immune-responsive ones. This work could provide an entirely new understanding of how metastatic cancer hides throughout the body and pave the way for more effective, personalized immunotherapies for patients with advanced colon cancer.

Technology Impact Award Investigator

Ekaterina Vinogradova, PhD

The Rockefeller University

A chemoproteogenomic platform to pharmacologically probe and modify T cell function

Relevance:
Colorectal Cancer, Lymphoma, Melanoma

Project Summary:

Cancer immunotherapy has transformed treatment for many patients, but its long-term success is often limited by T cell exhaustion. Over time, cancer-fighting T cells lose their strength and ability to attack tumors, reducing the effectiveness of therapies such as checkpoint inhibitors and engineered T cell treatments.

Although scientists have identified many of the genetic signatures associated with exhausted T cells, far less is known about the proteins that actually control this dysfunctional state. Dr. Vinogradova aims to uncover these critical molecular regulators and identify new ways to restore durable immune responses.

Her project combines advanced chemical biology, proteomics, and functional genomics to systematically study thousands of proteins and protein sites that may influence T cell exhaustion. A key innovation is the development of a powerful new screening platform capable of testing more than 4,000 potential protein targets directly in human T cells.

By identifying proteins that can be selectively controlled with small molecules, Dr. Vinogradova hopes to develop highly targeted chemical tools that reactivate exhausted T cells without broadly overstimulating the immune system. The most promising compounds will then be tested in melanoma models to determine whether they improve anti-tumor immunity.

This work could create an entirely new framework for discovering cancer immunotherapy drugs and lead to next-generation treatments that help immune cells remain active longer, improving the durability and effectiveness of cancer immunotherapy.

About CRI

The Cancer Research Institute (CRI) is a nonprofit organization dedicated to advancing the field of cancer immunotherapy through rigorous scientific research and global collaboration. Since 1953, CRI has been instrumental in uncovering the fundamental biology of the immune system and its application to cancer treatment, laying the groundwork for breakthroughs such as checkpoint blockade, cancer vaccines, and engineered cell therapies.

CRI's mission is to create a world immune to cancer by driving scientific discovery, accelerating collaboration, and turning breakthroughs into life-saving treatments. Our work bridges the gap between discovery and patient impact, ensuring that scientific innovation translates into real-world treatments.

To date, CRI has committed over $570 million to research impacting more than 30 cancer types. Our funding strategy is built on the framework of People × Biology × Data: supporting world-class scientists, deepening understanding of tumor-immune system interactions, and harnessing data to guide discovery and translation. By uniting these elements, CRI catalyzes innovation through our global research ecosystem to drive the next generation of discoveries forward.

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