

# 2017-18

## YEAR IN REVIEW

This has been a landmark year for cancer immunotherapy. The field celebrated FDA approval of the first CAR T therapies for acute myeloid leukemia and some large B-cell lymphomas, as well as the approval of multiple combination therapies, among many others. All of these milestones demonstrate the promise that immunotherapy brings for patients.

At the Parker Institute for Cancer Immunotherapy, we're also celebrating a year of milestones that are advancing the field. We expanded our network to include more brilliant minds, we launched clinical trials to study some of the highest unmet needs and we tackled high-risk, high-reward research projects to drive advances for patients.

#PICITurnsTwo

# OUR INSTITUTE AT A GLANCE



**7 INSTITUTIONS**

**25 PATENT  
APPLICATIONS  
SUPPORTED**



**40+**

Collaborations  
with industry &  
nonprofit partners



**60+ LABORATORIES**

**170<sup>+</sup> PICI  
RESEARCHERS**

**120** PICI-supported  
projects at  
our research  
institutions



**4,900+  
MEDIA  
MENTIONS**

**9**

**PARKER  
BRIDGE  
SCHOLARS & FELLOWS**

**2.5M SOCIAL MEDIA  
IMPRESSIONS**



## OUR TOP ACCOMPLISHMENTS

### Cutting-Edge Clinical Trials

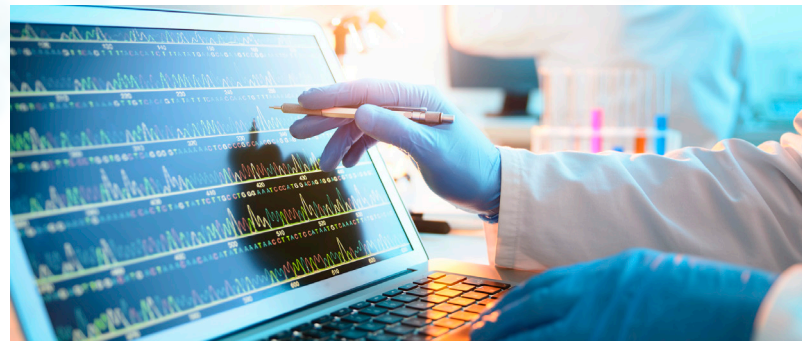
We launched the first Parker Institute-sponsored clinical trial to treat pancreatic cancer, the nation's third deadliest cancer, with a combination of standard chemotherapy and two immunotherapy agents. We used our in-house clinical capabilities to streamline the process and launched the trial in less than six months. The study is open at six Parker Institute research institutions, with enrollment in the trial progressing.



*"We have wanted to do this trial for many years. We're finally able to initiate it thanks to support from the Parker Institute and Cancer Research Institute for a boundary-pushing collaborative model and their ability to rapidly bring together the right team."*

Robert Vonderheide, MD, DPhil, the study's lead investigator,  
director of the Abramson Cancer Center  
of the University of Pennsylvania

We are helping to fund a clinical trial studying CRISPR/Cas9 in patients with melanoma, sarcoma and multiple myeloma. The trial is enrolling patients at the University of Pennsylvania, the lead site, and will be conducted at UCSF and the University of Texas MD Anderson Cancer Center. Researchers will use novel technology to engineer longer lasting killer T-cells for more efficient and effective T-cell therapy.



We're leveraging our clinical capabilities and network's expertise to initiate a series of platform clinical studies. This adaptive design allows us to rapidly evaluate multiple clinical questions and translate our findings into new studies that will advance our research more quickly. We will explore immuno-oncology combinations based on our researchers' data, as well novel biomarkers that could inform what we test next. This approach aligns with our mission to translate the best science into meaningful advances for patients.



## Deep Data Analysis

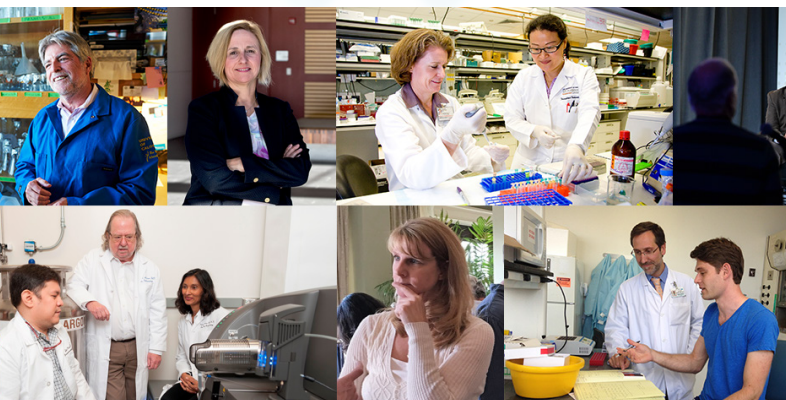
We've built a first-in-class Informatics team – with expertise in immunology and cutting-edge machine learning, visualization and statistical methods – that works closely with our investigators to harness data collected from Parker Institute studies and draw conclusions to improve patient responses to treatments. This has resulted in 30 one-on-one collaborations across our research institutions.

The Parker Institute Informatics team

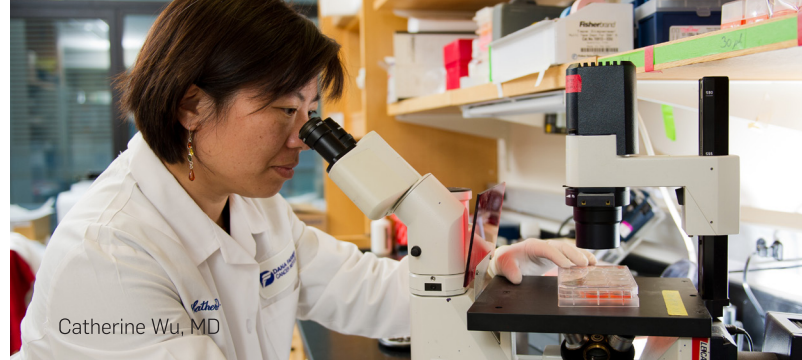


## World-Class Research

We launched the Tumor Neoantigen Selection Alliance to advance personalized cancer treatments through neoantigen discovery. We've completed our first two rounds of prediction using computational methods to determine cancer vaccine targets in melanoma and non-small cell lung cancer, using samples provided by UCLA and Memorial Sloan Kettering Cancer Center. The program has also expanded to include analyses of colorectal, bladder, ovarian and triple negative breast cancers. This global collaboration includes scientists from more than 40 of the leading neoantigen research groups in academia, nonprofit and industry.



We built the Parker Institute Translational Suite made up of tools and technologies that support basic and clinical research activities. The suite will provide well-annotated biological specimens, cutting-edge analytical tools, world-class bioinformatics and scientific expertise. The goal is to streamline and standardize collection processes, operations, and data collection and analysis to advance precision immunotherapy.



Catherine Wu, MD

Photo credit: Dana-Farber Cancer Institute

## Best-in-Class Network

We expanded our network to include world-class researchers at Dana-Farber Cancer Institute. Dana-Farber's expansive clinical trial capabilities and strong immuno-oncology research approach will complement the current work at the Parker Institute to help enhance and expand research projects and clinical trials.



*"The best way to make a huge impact in the field of oncology is to work collaboratively with leading researchers and institutions. We are hopeful that with so many talented scientists working in unison toward a common goal, we will have many positive outcomes."*

Laurie H. Glimcher, MD, president and CEO of Dana-Farber Cancer Institute and a member of the Parker Institute's scientific steering committee

We welcomed our second class of Parker Scholars, Bridge Scholars and Fellows. This program supports the most talented and ambitious young researchers who will transform the field. We currently have nine young researchers working on projects that align with our research focus areas, from better understanding why cancer immunotherapy works in some patients and not others to using statistics and machine learning to improve the quality of T-cells used in adoptive cell transfer therapy.



*"As a physician-scientist, my time is limited so there isn't much room to pursue high-risk and high-impact ideas. The Bridge Scholars program gives me the flexibility to pursue ideas I wouldn't be able to pursue without the additional funding, resources and access to the cancer immunotherapy community."*

Ansuman Satpathy, MD, PhD, Parker Bridge Scholar at Stanford Medicine



## Strategic Collaborations

We've collaborated with multiple industry and nonprofit partners that share our goal of speeding discoveries and getting much needed treatments to patients faster. These partners help us provide the best tools, technologies, assets and expertise so our researchers can do their best science. By working together, we can make an even bigger impact in cancer immunotherapy research.



Jennifer Wargo, MD

Photo credit: MD Anderson Cancer Center

We are collaborating with MD Anderson Cancer Center and industry partner Seres Therapeutics to launch what we expect to be the first-of-its-kind microbiome-cancer immunotherapy clinical trial for advanced melanoma patients. This is based on a study from Parker Institute researchers at MD Anderson that showed melanoma patients who have specific types of bacteria and a greater microbial diversity in their gut microbiome responded better to an anti-PD-1 checkpoint inhibitor versus those with less diversity.

## OUR NETWORK



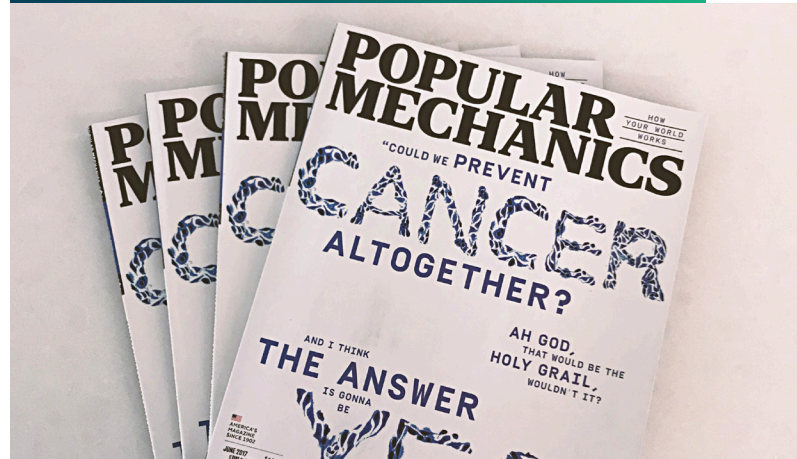
*"The Parker Institute brings together best-in-class scientists from all over the country to work together, which is an amazing accomplishment on its own. It's rare to have all of these pioneers come together for a common goal, and it's exciting to see the progress being made."*

Marcel van den Brink, MD, PhD, Parker Institute center co-director at Memorial Sloan Kettering Cancer Center

## IN THE NEWS

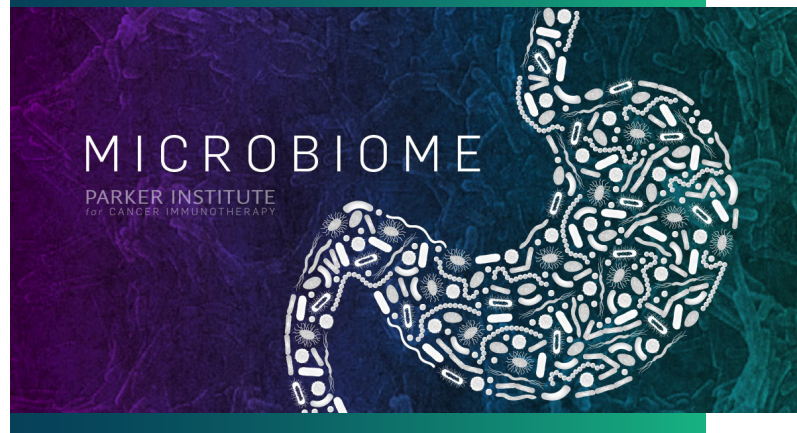
*We are at what Crystal Mackall calls "the end of the beginning," and the hope is that one day soon, the miracles will no longer be miracles. They will just be what happens.*

Popular Mechanics, May 2017, a special report on the promise of cancer immunotherapy featuring the Parker Institute and its researchers



*The new studies have "tremendous implications," Wargo says... And Wargo is planning to test whether manipulating the gut microbiome with fecal transplants (in pill form) or a bacterial treatment could help more melanoma patients respond to PD-1 blockers. The trial, sponsored by the Parker Institute for Cancer Immunotherapy in San Francisco, California, could begin in 6 to 8 months.*

Science, November 2017, featuring Jennifer Wargo, MD, of MD Anderson Cancer Center



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