

# Making An Impact

## Pancreatic Cancer Action Network Research Grants

PANCREATIC  
CANCER  
ACTION  
NETWORK

What research  
have we  
advanced?

How is my  
fundraising making  
a difference?



The Pancreatic Cancer Action Network has supported tens of millions of dollars in research grants to advance science and medicine and improve outcomes for patients. Here are a few examples of our impact!

### The pancreatic cancer mouse model used today

David Tuveson, MD, PhD and  
Sunil Hingorani, MD, PhD  
2003 & 2005 Career Development Awards

#### Pre-clinical Research

Our grant supported the development of the first genetically-engineered mouse model that accurately mimics human disease progression. The mice are genetically programmed to develop pancreatic cancer that starts with precancerous abnormalities and progresses to invasive and then metastatic disease. Additionally, the mouse model's pancreatic tumors are surrounded by a dense shell that mimics the complex and challenging tumor microenvironment (stroma) in human disease. **To this day, this continues to be the mouse model used in labs around the world to advance better treatments for patients facing pancreatic cancer.**



### "One-two punch" combination therapy

David Boothman, PhD  
2012, 2014, 2015 grants

#### New Treatment

We supported the development of a "one-two punch" combination therapy to knock out cancer. This dual-action therapy first **tricks pancreatic cancer cells into poisoning themselves and then stops the cells from repairing the poison's damage.** The novel combination treatment will enter clinical trials in 2017. This represents the "translational" research that our grants help to accelerate, moving vital work from the lab to the clinic to reach patients.



### Studying how a new immunotherapy works in each patient

David Linehan, MD and  
Brian Wolpin, MD, MPH  
2016 Research Acceleration Network-2

#### New Treatment

Thanks to the generosity of donors, we awarded our largest-ever grant of \$2 million in 2016 to accelerate a large-scale clinical trial bringing a new immunotherapy to patients with pancreatic cancer. **This novel treatment approach aims to block pancreatic cancer cells' ability to hide from the patient's immune system, so that the immune system can do its job of attacking and killing the cancer.**

A continuation of promising research from Dr. Linehan's 2015 Translational Research Grant, also funded by the Pancreatic Cancer Action Network, this major clinical trial is a multi-institutional collaboration between two researchers, Drs. Linehan (at University of Rochester) and Wolpin (at Dana-Farber Cancer Institute), who both bring unique expertise to the project. **Dr. Linehan's team is conducting the large-scale clinical trial, while Dr. Wolpin's team is simultaneously collecting and analyzing blood, bone marrow and tissue biopsies from patients at various stages of the disease and treatment – allowing the investigators to gain important knowledge from each and every patient treated with their regimen.** Ideally, knowledge gained will help improve the treatment's effectiveness and help identify which patients are most likely to respond positively, so that this targeted treatment can reach the patients who would benefit the most.



## Oral bacteria increasing risk

Jiyoung Ahn, PhD  
2012 Career Development Award

### Risk Factors



While missing teeth and poor dental health were previously believed to be associated with an increased risk of pancreatic cancer, no one was certain what was causing the association. Dr. Ahn's research supported by the Pancreatic Cancer Action Network found that **two specific species of bacteria in the mouth are associated with a more than 50 percent increased risk of pancreatic cancer.** These two bacteria could potentially serve as biomarkers, or important biological clues, that could help detect pancreatic cancer sooner in patients. Likewise, this opens up the possibility of studying whether efforts to reduce oral bacteria could decrease an individual's risk of pancreatic cancer. Ahn's important findings were recently published in a major publication, *Gut*, and were featured at the 2016 and 2017 American Association for Cancer Research Annual Meetings. She leveraged our \$200,000 grant to gather the data necessary to secure a prestigious \$2.8 million federal grant from the NCI.

## Cyst juice to predict cancer risk

Michael Goggins, MD  
2013 Research Acceleration Network

### Early Detection



Finding out that you have a cyst on your pancreas is a terrifying moment of uncertainty. *What are the chances of the cyst becoming cancer? How soon should I take action and start treatment?* To date, doctors have been unable to answer these questions with much certainty.

Dr. Goggins and his research team are **looking at the "juice" (fluid) from pancreatic cysts and determining the genetic features that predict the likelihood of progressing to cancer or remaining benign.** Using this information in their high-risk screening program that is active at sites throughout the country, this research will improve outcomes for patients with pancreatic cancer while also sparing those with benign cysts from invasive procedures and toxic treatments.

## "Stop the Start" - Understanding which cells lead to pancreatic cancer

Jennifer Bailey, PhD  
2011 Pathway to Leadership



### Understanding the Biology

Dr. Bailey's project, called "Stop the Start," focuses on pinpointing the very earliest events that cause normal pancreas cells to become cancerous and identifying the genetic alterations responsible. Importantly, her work successfully challenged and uprooted a long-held dogma in the field that pancreatic "ductal" adenocarcinoma only came from ductal cells. We now know that this is not true thanks to Bailey's groundbreaking research which has been detailed in a number of leading publications. **Understanding the biology of the normal cells within the pancreas helps identify which genetic changes take place to allow transformation into cancer cells – and each of those changes represents a potential drug target or a marker that could improve early detection.** Bailey received this grant as a postdoctoral fellow at Johns Hopkins University, and she is now an independent investigator at University of Texas Health Science Center.

## Secret passage through stroma

Kazuki Sugahara, MD, PhD  
2012 Career Development Award  
and 2015 Translational



### New Treatment

The complex and dense "stroma" surrounding pancreatic cancer cells has been a major barrier to delivering drugs to kill pancreatic cancer cells. Funded by two grants from the Pancreatic Cancer Action Network, Dr. Sugahara is developing **a novel peptide that acts as a unique key to unlock a previously unknown secret door through the stroma to allow treatments to reach and kill cancer cells directly.** His goal for his 2015 Translational Grant (with Andy Lowy co-PI) is to submit an Investigational New Drug application to the FDA in order to begin testing his treatment strategy in humans.

## Research Grants Key Stats:

- Since 2003, we've awarded over \$48.5 million through a competitive peer-reviewed process - including 159 grants to 158 researchers at 58 institutions across the country.
- Over our first decade of funding research, we supported 92 grantees who went on to publish 1,191 articles in peer-reviewed journals, cited more than 13,000 times. These grantees have leveraged each \$1 from us to gain \$8.28 in subsequent pancreatic cancer research funding.
- New grant opportunities open in fall of 2017.

To learn more and help make progress, visit [pancan.org/research](http://pancan.org/research).