



Pancreatic Cancer Research Program



Reduce the Burden of Pancreatic Cancer

For more information, please visit
cdmrp.health.mil/pcarp

VISION: Reduce the burden of pancreatic cancer among Service Members, Veterans, their Families and the American public

MISSION: Promote rigorous, innovative, high-impact pancreatic cancer research that leads to prevention, earlier diagnosis, new therapeutic tools, and improved outcomes

Based on 2021 Surveillance, Epidemiology, and End Results Program data, over 60,000 people received pancreatic cancer diagnoses in the U.S., making pancreatic cancer the third leading cause of cancer death in the country. Over 26,500 active-duty and former Service Members, as well as their beneficiaries, received pancreatic cancer diagnoses within the Military Health System from 2010-2019.

Nearly 50% of patients receive diagnosis at stage IV¹

Current 5-year survival rate is 12.5%²

STRATEGIC GOALS

EXPAND pancreatic cancer expertise by bridging diverse scientific fields

FILL GAPS and advance knowledge that will drive new and innovative clinical trials for pancreatic cancer

FACILITATE a multidisciplinary approach to advancing scientific knowledge of pancreatic cancer

RECRUIT and **RETAIN** young investigators dedicated to pancreatic cancer research

¹ <https://seer.cancer.gov/statfacts/html/pancreas.html>

² American Cancer Society. Facts & Figures 2024.

CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS

CDMRP BACKGROUND & HISTORY

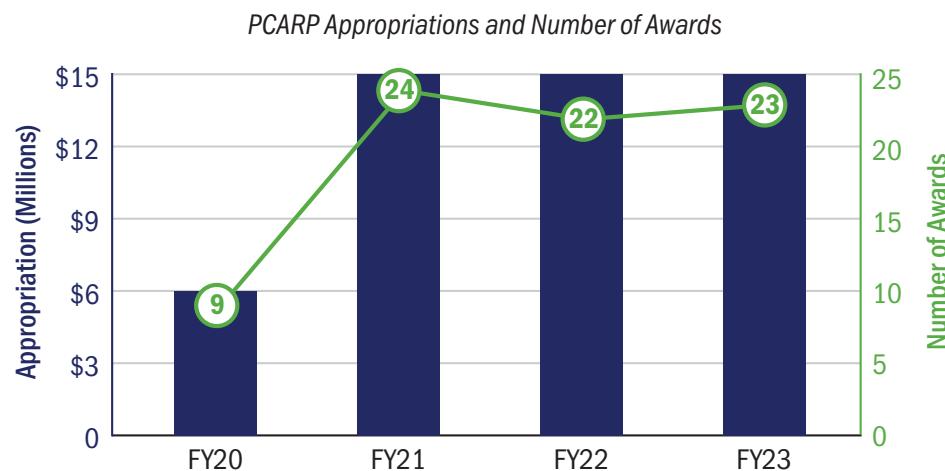
Congress established the Congressionally Directed Medical Research Programs in response to a grassroots effort in 1992 led by the breast cancer advocacy community. That effort resulted in a congressional appropriation of funds for breast cancer research and initiated a unique partnership among the public, Congress and the military. Since then, Congress appropriated funding for additional targeted research programs. The CDMRP managed over \$19.672 billion in congressional special interest funds from inception through fiscal year 2024. Congress provides general intent for each program and specifies funding as part of the annual Department of Defense appropriations bill. The CDMRP uses a two-tier research application review process. This process involves dynamic interaction between scientists, clinicians, consumers from advocacy communities, members of the military, and other specialists, as applicable. The first tier of evaluation is a scientific peer review of applications measured against established criteria determining scientific merit. The second tier is a programmatic review where applications with higher scientific or technical merit are evaluated for potential impact, adherence to the intent of the award mechanism, relevance to program goals and portfolio composition.

PANCREATIC CANCER RESEARCH PROGRAM

PROGRAM HISTORY

In FY20, the U.S. Congress established the Peer Reviewed Pancreatic Cancer Research Program in the DOD appropriation, allocating \$6 million to the new program. Congress appropriated \$15M to PCARP in FY21-FY24. Since its inception in 2020, the PCARP funded 78 awards that promote innovative, high-impact research leading to new therapies for and earlier detection of pancreatic cancer.

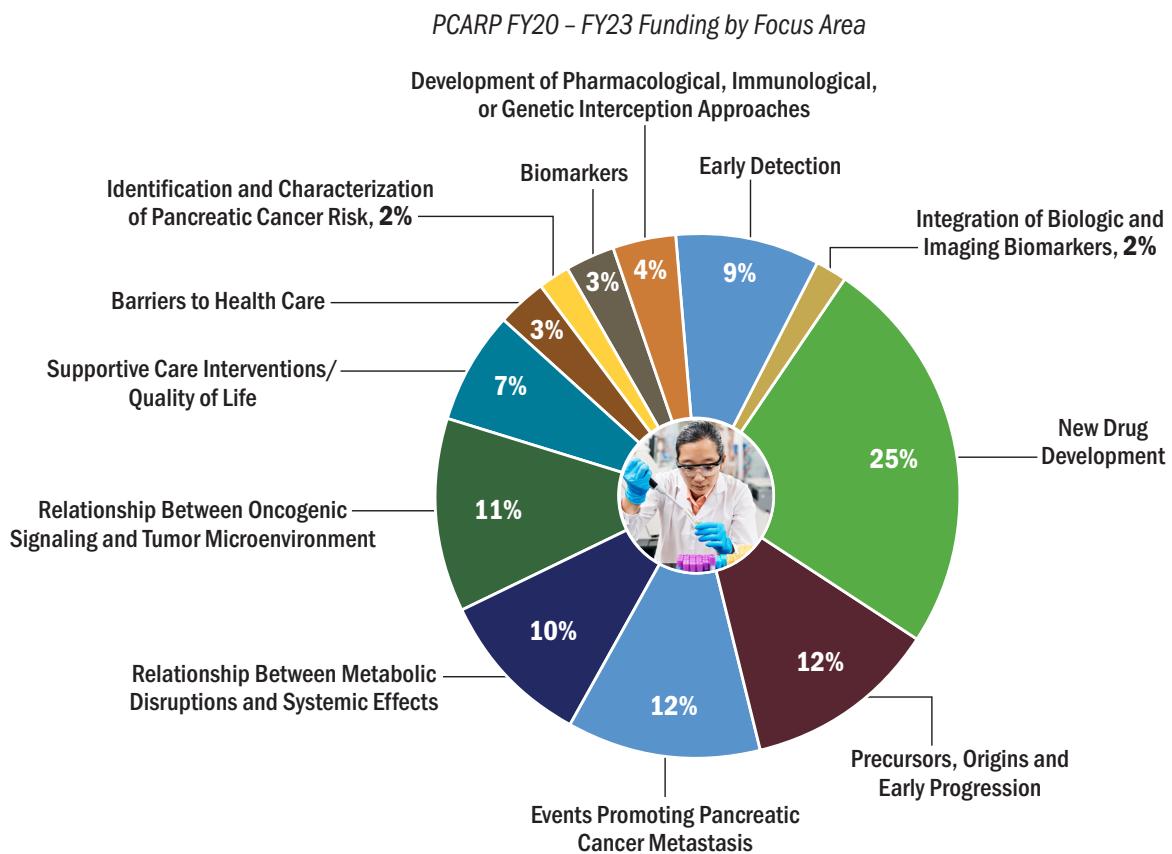
The PCARP developed a multifaceted strategic direction based upon the current state of pancreatic cancer research and the needs of the pancreatic cancer community.



PCARP FOCUS AREAS

TO FULFILL ITS STRATEGIC DIRECTION, THE PCARP CREATED NINE FOCUS AREAS:

- Early detection research.
- Supportive care interventions, patient-reported outcomes, quality of life and perspectives during diagnosis, treatment, and survivorship.
- Barriers to the implementation of health care.
- Identification and characterization of pancreatic cancer risk.
- Understanding metabolic disruptions and their systemic effects, including diabetes and cachexia.
- Understanding tumor development from precursors to metastasis.
- Understanding the relationship between oncogenic signaling and the tumor microenvironment that drives drug resistance and therapeutic response.
- Biomarkers to predict therapeutic response and guide management strategies.
- New drug development targeted toward cancer sensitivity and resistance mechanisms.



Anne Shimabukuro, PCARP Peer Reviewer FY23-FY24

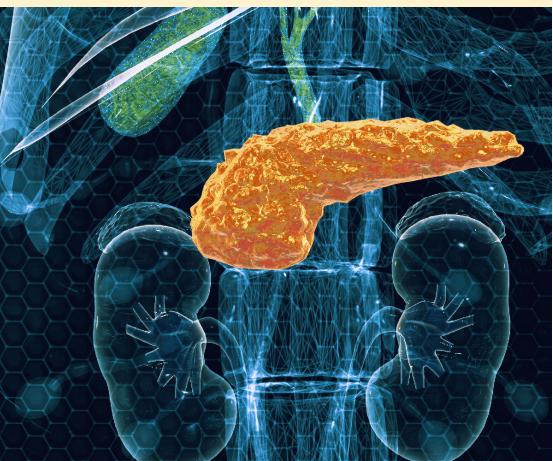
“As an 18-year survivor of pancreatic cancer, it was my honor to serve on a review panel for PCARP. I was so encouraged to read about the numerous projects seeking funding, and hopeful that PCARP’s grants would lead to earlier diagnoses and better outcomes for those affected by pancreatic cancer. It was also a pleasure to serve on a panel alongside professionals in the field. I felt like they valued my input as someone who has faced this diagnosis and survived.”

PANCREATIC CANCER CLINICAL TRIALS INVESTING IN INNOVATION AND CLINICAL IMPACT



One element of the PCARP's strategic direction is investment in research that

fills gaps and advances knowledge to drive new and innovative clinical trials for pancreatic cancer. The program's Translational Research Partnership Award allows funding for pilot clinical trials to fulfill the goal. The award mechanism aims to reach the program's long-term strategy of investing in science that makes a significant contribution to the development and testing of an approved therapy for pancreatic cancer with a meaningful impact on survival and quality of life for patients.



Adoptive Cellular Therapy for Pancreatic Cancer

Michael Hollingsworth, Ph.D. (pictured top), and Quan Ly, M.D., University of Nebraska Medical Center



Pancreatic ductal adenocarcinoma presents significant treatment challenges due to late presentation, early metastasis and the rapid development of chemo-resistance. Current treatments for PDAC, such as surgery and chemotherapy, offer limited benefits to survival. Together, these challenges highlight the need for new treatment strategies like adoptive cell therapy, a method for activating a patient's own immune cells and reinfusing them into patients. The ACT method uses in vitro-expanded tumor-infiltrating lymphocytes, but the therapy can be slow and ineffective.

With an FY23 Translational Research Partnership Award, Hollingsworth and Ly will explore a novel therapeutic strategy that combines ACT with tumor neoantigen reactive T cells isolated from the spleens of PDAC patients. Hollingsworth and Ly hypothesize that using expanded and activated NRT cells from the spleen, in addition to surgical and chemotherapy strategies, will improve immunity to cancer antigens, limit micrometastasis and improve time to relapse. The team will file the finalized cellular product for Investigational New Drug approval and conduct a phase 1 safety study.



Real-Time Metabolic Imaging to Interrogate Early Detection and Prevention of Pancreatic Cancer



Pratip Bhattacharya, M.D., Ph.D. (pictured top), Department of Cancer Systems Imaging, MD Anderson Cancer Center, and Florencia McAllister, M.D., Department of Clinical Cancer Prevention, MD Anderson Cancer Center

Pancreatic ductal adenocarcinoma is an aggressive cancer and the most common form of pancreatic cancer. Patients often present with tumors that surgery cannot completely remove. Because of a lack of therapeutic options, clinicians need new strategies for prevention and early detection of pancreatic cancer. Researchers associate an immunosuppressive microenvironment with the development of PDAC. However, immunopreventive interventions cannot be tracked by measuring tumor incident and size at one point. Clinicians and researchers need sensitive methods that assess tumor incidence in live animals and in real time. In a pilot clinical trial through an FY23 Translational Research Partnership Award, Bhattacharya and McAllister work to verify how hyperpolarized C pyruvate-based metabolic MRI can be used for early detection of pancreatic cancer. Hyperpolarized MRI provides insight into cellular metabolism and enhances the signal of conventional MRI 10,000-fold. This level of sensitivity detects premalignant pancreatic lesions and monitors antibiotic effectiveness. Using the imaging ability, Bhattacharya and McAllister monitor the microenvironment that supports the development of PDAC and repurpose antibiotics for prevention while determining the best regimen and dose. The team uses preclinical models before validating on patients recently diagnosed with PDAC.

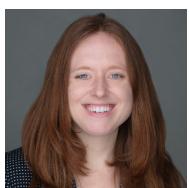


Pooled Mutant KRAS-Targeted Long Peptide Vaccine Combined With Anti-PD-1 and Anti-CTLA-4 Antibodies for Patients With Stage IV MMR-p Pancreatic Ductal Adenocarcinoma

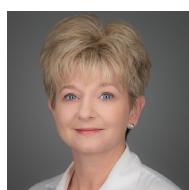


Nilo Azad, M.D. (pictured top), and Neeha Zaidi, M.D., Johns Hopkins University

The average patient diagnosed with metastatic or stage IV pancreatic cancer will only live for about a year after diagnosis. Chemotherapy, a treatment strategy that uses drugs to stop cancer cell growth, is often used as an upfront treatment to control the growth and spread of cancer. Because chemotherapy is toxic, managing the unpleasant side effects is difficult. No standard maintenance strategy exists for metastatic cancer. With an FY23 Translational Research Partnership Award pilot clinical trial, Azad, Zaidi and their team at JHU tested a novel cancer vaccine to teach the immune system to target unique aspects of cancer cells and mutations like the KRAS mutation, known to promote cancer growth. Azad and his team proved that combining their vaccine with immunotherapy activated the immune system against the KRAS mutation. Their stage I trial successfully demonstrated that the immunotherapy and vaccine combination is effective, safe and tolerable. With the new funding, the team moves to a clinical trial to validate the effectiveness of the treatment combination to stop the progression of cancer and determine the treatment's effects on the immune system.



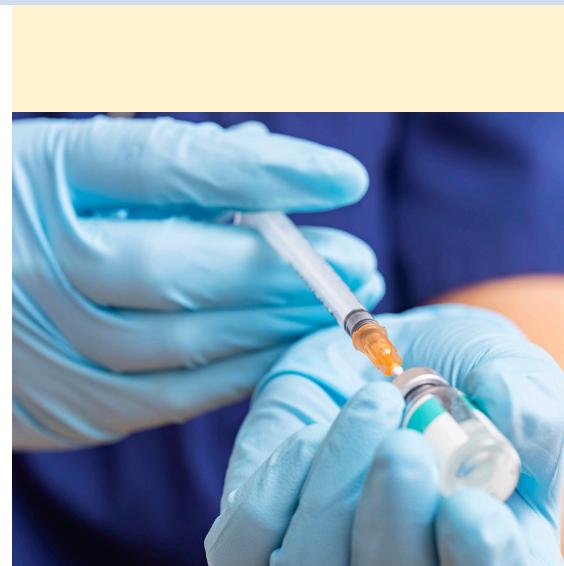
Remote Malnutrition Monitoring After Surgery for Pancreatic Cancer Patients



Kea Turner, Ph.D. (pictured top), University of North Carolina at Chapel Hill, and Pamela Hodul, M.D., H. Lee Moffitt Cancer Center and Research Institute at the University of South Florida

Many pancreatic cancer patients struggle with malnutrition after surgery, and insufficient nutrition makes recovery difficult. Although patients receive some help with their diet while hospitalized, they often report a lack of help from their health care team once released from the hospital. To help pancreatic cancer patients manage nutrition after surgery, Hodul and her team developed the Support

Through Remote Observation and Nutrition Guidance, or STRONG, intervention. The STRONG program monitors patients' nutrition, while the patients meet with dieticians and receive counseling about managing nutrition after surgery. Patients also receive a smartphone app to help monitor their own nutrition. Results of a small pilot study suggest that the intervention is successful. In an FY23 Translational Research Partnership Award pilot clinical trial, Hodul and her team test the STRONG intervention in a larger patient population and compare results to care that patients usually receive after surgery. The research team will then translate the STRONG intervention into Spanish to reach their growing Spanish-speaking patient population. Next, the team will enroll 40 patients into the STRONG intervention group and another 40 into a group to receive usual care. Results of their study could help researchers and clinicians develop better post-surgery care for pancreatic cancer. And, if successful, the STRONG intervention could expand to support other types of cancer patients at risk for malnutrition after surgery.



IMPROVING QUALITY OF LIFE FOR THE PANCREATIC CANCER COMMUNITY



The PCARP promotes impactful research to improve

outcomes for those affected by the disease and invests in patient-centered research that may profoundly affect patients' overall quality of life.

The PCARP's focus areas include:

- Supportive care interventions, patient-reported outcomes, quality of life and perspectives during diagnosis, treatment and survivorship;
- Barriers to the implementation of health care.



A Patient-Centric Approach to Improving Guideline-Concordant Care in Pancreatic Cancer: Using Modifiable Barriers to Identify Patients at Risk for Disparities

Annabelle Fonseca, M.D., University of Alabama at Birmingham

Factors such as timely and appropriate access to care that patients receive for pancreatic cancer represent barriers throughout the cancer treatment journey. With an FY23 Focused Pilot Award, Fonseca and her team work to create a system that identifies patients at risk of not receiving optimal care. The team hypothesizes that a system combining both self-reported information and data from electronic health records may accurately identify pancreatic cancer patients at risk for not receiving optimal care.



Development of an eHealth Psychosocial Stress and Symptom Management Intervention for Patients With Pancreatic Cancer

Frank Penedo, Ph.D., University of Miami, Coral Gables

With support from an FY23 Focused Pilot Award, Penedo and his team work to create an electronic health-based psychosocial stress and symptom management, ePSMI, intervention for pancreatic cancer. The intervention could support patients receiving chemotherapy before surgery, and then again after surgery. The goal of ePSMI is to reduce symptom burden and improve quality of life. A trained therapist tailors the 10-week program to the needs of each pancreatic cancer patient. The study captures experiences of pancreatic cancer survivors as well as their care providers to determine the optimal time for intervention and recruits a broad range of patient populations to address sociocultural and contextual factors impacting care. The study is the first step toward a larger, randomized clinical trial.





Impacting Quality of Life and Pancreatic Cancer Survivorship Through a Telehealth Intervention

Vincent Chung, M.D. (pictured top), and Virginia Sun, Ph.D., M.S.N., R.N., City of Hope Beckman Research Institute



Thanks to improving cancer treatments, many pancreatic cancer patients live longer. Sometimes patients live with debilitating symptoms because of the disease, side effects of treatments or other medical conditions. The burden of caring for these symptoms impacts the caregiver's physical health, emotional well-being and quality of life. With an FY23 Translational Research Partnership Award pilot

clinical trial, Chung and Sun seek to test a nurse-led telehealth resource for pancreatic patients and their familial caregivers. The intervention includes a comprehensive quality-of-life assessment, case presentation at interdisciplinary care meetings and two coaching sessions with a nurse. Patients and caregivers participate in six telehealth sessions over a three-month period. Results of the study may determine the preliminary efficacy to support a larger confirmation trial. If successful, the intervention could address gaps in quality of life and survivorship that may impact mission readiness and the health and well-being of Service Members and their Families, Veterans and the general public.



Enhancing Clinical Trial Discovery, Matching and Enrollment in PDAC Using Fine-Tuned Large Language Models

Naim Rashid, Ph.D., University of North Carolina, Chapel Hill

Despite recommendations to make clinical trials accessible to all patients, both physicians and patients often struggle to identify patient eligibility and appropriate clinical trials. Rashid and his team work to connect patients with appropriate clinical trials by using an artificial intelligence tool that functions similarly to an automated chat box. Using information from past patients, researchers train the chat box to suggest the best trials for new patients. The team will then create a phone-based app to connect with the artificial intelligence tool. The intervention aims to connect all patients with appropriate clinical trials.



**Aatur Singh,
Ph.D., PCARP
Programmatic
Panel Member
FY23-FY24**

"Through bold collaborations and support for rising investigators, the PCARP program is shaping the future of pancreatic cancer research. By accelerating breakthroughs in prevention, detection, diagnosis, and treatment, it aims to save lives and revolutionize patient care."



For more information, please visit

<https://cdmrp.health.mil>

or contact us at:

dha.detrick.cdmrp.mbx.public-affairs@health.mil

