Pancreatic Cancer Action Network news:

Our Promise to Pancreatic Cancer Patients

Precision Promise: https://www.pancan.org/research/precision-promise/

We have made a promise to transform outcomes for patients with pancreatic cancer and revolutionize the way clinical trials are conducted. It is with great pride that we announce Precision Promise, the first large-scale precision medicine trial that will put the patient at the center of every decision and help advance our goal to double survival by 2020.

The Leading Doctors Behind Precision Promise

We’re proud to partner with 12 initial medical centers who were selected through a competitive peer-review process. These 12 sites will provide treatment to patients enrolled in the Precision Promise clinical trial come spring 2017.

Nation Urged to Shift from Pink to Purple for Pancreatic Cancer, A Disease That Kills More People Annually Than Breast Cancer

The Pancreatic Cancer Action Network urges the nation to shift from pink during breast cancer awareness month in October to purple this November in support of pancreatic cancer awareness month by learning about the symptoms and risk factors of pancreatic cancer.

New Guidelines Recommend Palliative Care Early, with Treatment

ASCO guidelines: http://ascopubs.org/doi/abs/10.1200/JCO.2016.70.1474

Patients fighting pancreatic cancer may experience painful and debilitating symptoms and side effects from their disease and treatment. Supportive (palliative) care – which focuses on comfort, quality of life and a patient’s total well-being – can help. Seeing healthcare professionals who focus on symptom management and supportive (palliative) care improves outcomes and is critical for your quality of life. The Pancreatic Cancer Action Network strongly recommends that symptom management and supportive (palliative) care should be provided early in your diagnosis as well as during and after treatment.

Clinical Trial Finder
clinicaltrials.pancan.org/hcp

The Clinical Trial Finder saves you time and energy by helping you quickly and easily find the most current pancreatic cancer clinical trials information. By registering for an account, you will have access to the most up-to-date and comprehensive database of pancreatic cancer clinical trials in the United States. Our online tool allows you to perform a patient-specific search to locate available trials based on your
patients’ needs or a general search to understand the current clinical trials landscape to inform research or trial design.

Know Your Tumor℠: Powerful Knowledge, Personal Treatment
pancan.org/knowyourtumor/hcp
Our Know Your Tumor service is an IRB-approved protocol that provides you and your pancreatic cancer patients with a molecular profiling report of their tumor, which includes personalized treatment options – including standard treatments, off-label treatments and available clinical trials. Treatment options are determined after findings of the molecular reports are interpreted by an expert panel, providing valuable insight to support your treatment decisions.

Patient Registry
pancan.org/patientregistry
The Patient Registry is a global online database created to look for patterns in treatments, side effect management and diagnostics that will lead to improved treatment options and outcomes for patients. Whether you have been diagnosed with pancreatic cancer or have provided care for someone with pancreatic cancer, your contributions are meaningful. By joining our quickly growing community and sharing your experiences, you’re giving researchers access to crucial data that will help make discoveries. Together, we will move pancreatic cancer research forward.

Funding opportunities:

Apply now and coming soon! Pancreatic Cancer Action Network’s 2017 Research Grants Program
https://www.pancan.org/research/grants-program/apply-for-a-pancreatic-cancer-research-grant/
Upcoming deadlines:
Precision Medicine Targeted Grant: Applications due February 15, 2017
Early Detection Targeted Grants (will open Dec. 22): Applications due February 22, 2017
KRAS Travel Scholarship applications accepted on a rolling basis
We are announcing two new funding opportunities – targeted grants in early detection and precision medicine – for up to $1 million each! Please apply today and spread the word! If you or your colleagues do not already receive funding alerts and updates directly from our organization, please email research@pancan.org to be added to our mailing list.

New! Consortium for Pancreatic Ductal Adenocarcinoma (PDAC) Translational Studies on the Tumor Microenvironment (U01)
Open date (earliest submission date): February 7, 2017
Letter of Intent due date(s): February 7, 2016
Application due date(s): March 7, 2017
The purpose of this funding opportunity announcement (FOA) is to stimulate research in the area of PDAC microenvironment with the ultimate goal of understanding the interaction between tumors and the microenvironment. Studying tumor-microenvironment interactions in PDAC should lead to the discoveries of vulnerabilities that could be exploited in the design of immunotherapies such as cancer vaccines, checkpoint inhibition, cellular therapies and their combination with other precision medicine interventions and radiation therapy.

New! Resource Center for the Consortium for Pancreatic Ductal Adenocarcinoma (PDAC) Translational Studies (U24)
Open date (earliest submission date): February 7, 2017
Letter of Intent due date(s): February 7, 2016
Application due date(s): March 7, 2017
This funding opportunity announcement (FOA) invites applications to establish a Resource Center (RC) for the Consortium for Pancreatic Ductal Adenocarcinoma (PDAC) Translational Studies on the Tumor Microenvironment (Consortium) that has the ultimate goal to design new immunotherapy and combination interventions in PDAC.

New! PDX Data Commons and Coordinating Center (PDCCC) for the PDX Development and Trial Centers Research Network (PDXNet) (U24)
Open date (earliest submission date): February 3, 2017
Letter of Intent due date(s): 30 days prior to the application due date
Application due date(s): March 3, 2017
The purpose of this funding opportunity announcement (FOA) is to establish a PDXNet Data Commons and Coordinating Center (PDCCC). PDCCC will interact with and coordinate with the PDX (Patient-Derived Xenograft) Development and Trial Centers Research Network (PDXNet) comprised of four PDX Development and Trial Centers (PDTCs, to be supported by companion FOA, RFA-CA-17-003) in a collaborative network.

New! PDX Development and Trial Centers (PDTCs) (U54)
Open date (earliest submission date): February 3, 2017
Letter of Intent due date(s): 30 days prior to the application due date
Application due date(s): March 3, 2017
This funding opportunity announcement (FOA) solicits applications for PDX (patient-derived xenografts) Development and Trial Centers (PDTCs) to serve as the laboratory research units of the PDX Development and Trial Centers Research Network (PDXNet).

The Pancreatic Cancer Detection Consortium (U01)
Deadlines: May 26, 2017; September 21, 2017; April 6, 2018
This Funding Opportunity Announcement (FOA) invites applications from multi-disciplinary teams of researchers and clinicians to establish the Pancreatic Cancer Detection Consortium (PCDC) to conduct research to improve the detection of early stage pancreatic ductal adenocarcinoma (PDAC) and characterization of its precursor lesions.

Job opportunities:

Faculty Position: Assistant Professor of Cancer Cell Biology
https://www.ndsu.edu/biology/job_openings/
North Dakota State University is looking to hire an Assistant Professor of Cancer Cell Biology who conducts pancreatic cancer research.

Meetings:

2017 Gastrointestinal Cancers Symposium
http://gicasym.org/
Meeting: January 19 – 21, 2017, Moscone West Building, San Francisco, CA
The Gastrointestinal (GI) Cancers Symposium is a specialized oncology event designed to provide scientific and educational content for members of the GI cancer care and research community. This three-
day meeting encompasses the latest science in cancers of the esophagus and stomach; the pancreas, small bowel, and hepatobiliary tract; and the colon, rectum, and anus. This year’s Symposium offers breakout sessions covering cutting-edge and controversial topics, a trainee and early-career networking luncheon with noted faculty members, and the opportunity to view and discuss selected posters with respected faculty members during poster walks.

**AACR Annual Meeting 2017**
http://www.aacr.org/Meetings/Pages/MeetingDetail.aspx?EventItemID=105#.WAFbpvkrLIU
*Meeting: April 1 – 5, 2017, Walter E. Washington Convention Center, Washington, D.C., USA*

The AACR Annual Meeting highlights the best cancer science and medicine from institutions all over the world. Attendees are invited to stretch their boundaries, form collaborations, attend sessions outside their own areas of expertise, and learn how to apply exciting new concepts, tools, and techniques to their own research.

**Pancreas Club Annual Meeting**
http://pancreasclub.com/annualmeeting/
*Meeting: May 5 – 6, 2017, Drake Hotel, Chicago, IL*

Mark your calendars!

**Aspen Cancer Conference**
http://www.aspencancerconference.org/
*Meeting: July 15 – July 18, 2017, the Gant Conference Center and Resort, Aspen, CO*

The Aspen Cancer Conference, a series of yearly meetings conceived by Drs. Benjamin F. Trump and Curtis C. Harris, was begun in 1985. The Conference has continued to emphasize the relationships between toxicity and carcinogenesis and the identification of novel strategies in cancer prevention, diagnosis, and therapy. It is evident that new paradigms are needed to explain that an increasing number of mutagenic and non-mutagenic agents result in carcinogenesis, that cell injury and death, repair, and inflammation are constant companions of cancer.

**Other community news:**

**Seven UCSF Scientists Receive NIH ‘Blue-Sky’ Research Awards**

**2016 New NIH Innovator Award Recipients:** https://commonfund.nih.gov/newinnovator/Recipients16

Rushika Perera, PhD, recipient of the 2016 Skip Viragh – Career Development Award, received a highly prestigious New Innovator Award from the National Institutes of Health.

**NYU Langone’s Research Leader Receives Prestigious Award from the National Cancer Institute**

Dafna Bar-Sagi, PhD, has been named a recipient of the Outstanding Investigator Award, a highly prestigious honor presented by the National Cancer Institute (NCI). Dr. Bar-Sagi has received multiple research grants from the Pancreatic Cancer Action Network and is a member of the Scientific and Medical Advisory Board.

**Hirshberg Foundation Seed Grant Recipients**
http://pancreatic.org/research/seed-grant-program/seed-grant-recipient

The 2016-2017 Hirshberg Foundation for Pancreatic Cancer Research Seed Grant Award recipients have been announced. Among the recipients is Nada Kalaany, PhD, recipient of a 2015 Career Development Award.
Dr. David Tuveson Named Director, NCI-Designated Cancer Center at Cold Spring Harbor Laboratory
David Tuveson, MD, PhD, will succeed Dr. Bruce Stillman as Director of the Cold Spring Harbor Laboratory (CSHL) Cancer Center. Dr. Tuveson’s research and clinical focus is pancreatic cancer, a lethal malignancy that continues to lack effective clinical solutions. His research at CSHL is making progress toward finding a cure by detecting the disease earlier and designing novel therapeutic approaches, based in part on pancreatic organoid technology that he has pioneered.

Some Websites May Not Be Effective in Helping Pancreatic Cancer Patients Make Optimal Treatment Decisions
Cancer patients often turn to the Internet to find information about treatment options, but not all websites are created equal. Websites featuring pancreatic treatment modalities differ significantly in the way they present information based on therapy type, according to new findings presented at the 2016 Annual Clinical Congress of the American College of Surgeons.

Call for Papers: Case Reports in Pancreatic Cancer
http://www.liebertpub.com/lpages/crpc-cfp-122015/142
http://online.liebertpub.com/doi/pdfplus/10.1089/crpc.2015.29008.cfp
Case Reports in Pancreatic Cancer is an open access journal publishing authoritative case reports on all aspects of pancreatic cancer diagnosis, management, treatment, and outcomes. The Journal enables physicians, surgeons, oncologists, and the team of professionals that determine and administer care to share their experiences and foster communication and collaboration to optimize patient care. The Journal is currently seeking high quality case reports on pancreatic cancer to be published in future issues.

BIOLOGY OF CANCER

A Renewed Model of Pancreatic Cancer Evolution Based on Genomic Rearrangement Patterns
https://www.ncbi.nlm.nih.gov/pubmed/27732578
- Journal: Nature
- Institution(s): Wellcome Trust Sanger Institute, Hinxton, UK, and others
- Corresponding author(s): Faiyaz Notta or Thomas Hudson
- Pancreatic Cancer Action Network-affiliated authors:
  - Michael Hollingsworth, PhD: member, Scientific and Medical Advisory Board
  - Gloria Petersen, PhD: member, Scientific and Medical Advisory Board
- Major finding: The authors employed a genetic approach to delete the obligate mTORC2 subunit Rictor and identified the critical times during which tumorigenesis requires mTORC2 signaling. Targeting mTOR may be a potential therapeutic strategy in pancreatic cancer.

LKB1 Loss Links Serine Metabolism to DNA Methylation and Tumorigenesis
- Journal: Nature
- Institution(s): Massachusetts General Hospital, Boston, MA, and others
- Corresponding author(s): Nabeel Bardeesy
- Pancreatic Cancer Action Network-affiliated author: Nabeel Bardeesy, PhD: recipient, 2008 Randy Pausch, PhD – Pilot Grant
• **Major finding:** The authors identify a network linking metabolic and epigenetic alterations that is central to oncogenic transformation downstream of the liver kinase B1 (LKB1, also known as STK11) tumor suppressor, an integrator of nutrient availability, metabolism and growth.

**Leveraging Mechanisms Governing Pancreatic Tumorigenesis to Reduce Pancreatic Cancer Mortality**


- **Journal:** Trends in Endocrinology & Metabolism
- **Institution(s):** University of California Los Angeles, Los Angeles, CA
- **Corresponding author(s):** David Dawson
- **Pancreatic Cancer Action Network-affiliated author:** David Dawson, MD, PhD: recipient, 2008 Seena Magowitz – Career Development Award
- **Major finding:** Central among these molecular signaling pathways that drive pancreatic ductal adenocarcinoma (PDA) is oncogenic KRAS, a mediator of cellular plasticity, metabolic reprogramming, and inflammatory and paracrine signaling required for tumor development and maintenance. Biological aggressiveness is further conferred by a highly fibrotic and immunosuppressive PDA microenvironment that also acts as a barrier to effective drug delivery. The regulation of these mechanisms and their implications for early cancer detection, chemoprevention and therapy are discussed.

**mTORC2 Signaling Drives the Development and Progression of Pancreatic Cancer**


- **Journal:** Cancer Research
- **Institution(s):** University of Massachusetts Medical School, Worcester, MA, and others
- **Corresponding author(s):** Owen Sansom or Brian Lewis
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Nabeel Bardeesy, PhD: recipient, 2008 Randy Pausch, PhD – Pilot Grant
  - Brian Lewis, PhD: recipient, 2009 Constance Williams – Pilot Grant and 2006 Michael Landon – Career Development Award
- **Major finding:** The authors employed a genetic approach to delete the obligate mTORC2 subunit Rictor and identified the critical times during which tumorigenesis requires mTORC2 signaling. Targeting mTOR may be a potential therapeutic strategy in pancreatic cancer.

**Heterogeneous Stromal Signaling within the Tumor Microenvironment Controls the Metastasis of Pancreatic Cancer**

https://www.ncbi.nlm.nih.gov/pubmed/27821486

- **Journal:** Cancer Research
- **Institution(s):** Johns Hopkins University School of Medicine, Baltimore, MD, and others
- **Corresponding author(s):** Lei Zheng
- **Pancreatic Cancer Action Network-affiliated author:** Elizabeth Jaffee, MD: member, Emeritus Scientific and Medical Advisory Board
- **Major finding:** The authors’ results illuminate tumor-stromal interactions which drive metastasis, and provide a mechanism-based rationale for a stroma-directed therapy for pancreatic ductal adenocarcinoma.

**Glycoproteins and Glycoproteomics in Pancreatic Cancer**


- **Journal:** World Journal of Gastroenterology
- **Institution(s):** University of Washington, Seattle, WA
- **Corresponding author(s):** Sheng Pan
Pancreatic Cancer Action Network-affiliated authors:
  o Teresa Brentnall, MD: member, Emeritus Scientific and Medical Advisory Board
  o Ru Chen, PhD: recipient, 2006 Career Development Award

Major finding: Recent advance in glycoproteomics, glycomics and other chemical biology techniques have been employed to better understand the complex mechanism of glycosylation events and how they orchestrate molecular activities in genomics, proteomics and metabolomics implicated in pancreatic adenocarcinoma. A variety of strategies have been demonstrated targeting protein glycosylation and polysaccharides for diagnostic and therapeutic development.

TIMPing Fate: Why Pancreatic Cancer Cells Sojourn in the Liver


- Journal: Gastroenterology
- Institution(s): New York University School of Medicine, New York, NY
- Corresponding author(s): Alejandro Torres-Hernandez
- Pancreatic Cancer Action Network-affiliated author: George Miller, MD: recipient, 2014 Celgene Corporation – Innovative Grant
- Major finding: In this issue of Gastroenterology, Grünwald et al investigate the biologic underpinnings of pancreatic cancer liver metastases. The paper adds to the growing body of literature that demonstrates that the liver-specific metastatic niche develops early during the progression of pancreas cancer. Measuring tissue inhibitor of metalloproteinases-1 (TIMP-1) may represent a viable potential screening modality, and warrants further attention.

Cancer-associated Fibroblast-derived Annexin A6+ Extracellular Vesicles Support Pancreatic Cancer Aggressiveness

- Journal: Journal of Clinical Investigation
- Institution(s): INSERM, Marseilles, France, and others
- Corresponding author(s): Richard Tomasini
- Major finding: The authors’ findings suggest that cancer-associated fibroblast (CAF)-tumor cell crosstalk supported by annexin A6+ extracellular vesicles is predictive of pancreatic ductal adenocarcinoma (PDA) aggressiveness, highlighting a therapeutic target and potential biomarker for PDA.

Pancreatic Cancer: Fast or Slow?


- Journal: Nature Reviews Cancer
- Institution(s): Nature editorial offices, London, UK
- Corresponding author(s): Sarah Seton-Rogers
- Major finding: Despite extensive research into pancreatic ductal adenocarcinoma (PDAC), the disease continues to have high mortality rates. The most widely accepted model of PDAC development is stepwise, involving sequential acquisition of independent mutations in several key oncogenes and tumor suppressors.

Pancreatic Cancer: Mapping Malignant Tissue Dynamics


- Journal: Nature Reviews Gastroenterology & Hepatology
- Institution(s): Nature editorial offices, London, UK
• Corresponding author(s): Iain Dickson
• Major finding: New research has identified the molecular networks underlying pancreatic regeneration and early carcinogenesis, revealing distinct dynamic patterns of proliferation between different pancreatic cell types.

Abstracts of Papers Submitted to the 47th Meeting of the American Pancreatic Association, October 26–29, 2016, Boston, Massachusetts
Abstracts of papers submitted to the 47th Meeting of the American Pancreatic Association, October 26–29, 2016, Boston, Massachusetts

**ETIOLOGY**

Human oral microbiome and prospective risk for pancreatic cancer: a population-based nested case-control study

• Journal: Gut
• Institution(s): New York University School of Medicine, New York, NY, and others
• Corresponding author(s): Jiyoung Ahn
• Pancreatic Cancer Action Network-affiliated authors:
  ○ George Miller, MD: recipient, 2014 Celgene Corporation – Innovative Grant
  ○ Jiyoung Ahn, PhD: recipient, 2012 The Daniel and Janet Mordecai Foundation – Career Development Award
• Major finding: Carriage of oral pathogens, *Porphyromonas gingivalis* and *Aggregatibacter actinomycetemcomitans*, were associated with higher risk of pancreatic cancer. Phylum *Fusobacteria* and its genus *Leptotrichia* were associated with decreased pancreatic cancer risk. This study provides supportive evidence that oral microbiota may play a role in the etiology of pancreatic cancer.

Leucocyte Telomere Length, Genetic Variants at the *TERT* Gene Region and Risk of Pancreatic Cancer

• Journal: Gut
• Institution(s): Brigham and Women's Hospital, and Harvard Medical School, Boston, MA, and others
• Corresponding author(s): Ying Bao
• Pancreatic Cancer Action Network-affiliated author: Brian Wolpin, MD, MPH: co-PI, 2016 The Shirley Sadoff – Research Acceleration Network-2 Grant
• Major finding: Telomere shortening occurs as an early event in pancreatic tumorigenesis, and genetic variants at the telomerase reverse transcriptase (*TERT*) gene region have been associated with pancreatic cancer risk. Prediagnostic leucocyte telomere length and genetic variants at the TERT gene region were associated with risk of pancreatic cancer.

Pancreatic Cancer Risks Associated with Prediagnostic Plasma Levels of Leptin and Leptin Receptor Genetic Polymorphisms

• Journal: Cancer Research
Major finding: Leptin is an adipokine involved in regulating energy balance which has been identified as a potential biological link in development of obesity-associated cancers such as pancreatic cancer. Higher prediagnostic levels of plasma leptin were associated with an elevated risk of pancreatic cancer among men, but not among women.

Obstructive Sleep Apnea and Pathological Characteristics of Resected Pancreatic Ductal Adenocarcinoma

[Link](https://www.ncbi.nlm.nih.gov/pubmed/27732623)

- **Journal:** PLoS One
- **Institution(s):** The Johns Hopkins University School of Medicine, Baltimore, MD
- **Corresponding author(s):** Michael Goggins
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Ralph Hruban, MD: member, Emeritus Scientific and Medical Advisory Board
  - Michael Goggins, MD: PI, 2013 Skip Viragh – Inaugural Research Acceleration Network-2 Grant
- **Major finding:** The observed pathological differences between obstructive sleep apnea (OSA)-associated and non-OSA-associated pancreatic cancers supports the hypothesis that OSA can influence the pathologic features of pancreatic ductal adenocarcinoma.

Dietary Acrylamide and the Risk of Pancreatic Cancer in the International Pancreatic Cancer Case-Control Consortium (PanC4)

[Link](https://www.ncbi.nlm.nih.gov/pubmed/27836886)

- **Journal:** Annals of Oncology
- **Institution(s):** University of Milan, Milan, Italy, and others
- **Corresponding author(s):** Claudio Pelucchi
- **Major finding:** This Pancreatic Cancer Case-Control Consortium (PanC4)-pooled-analysis found no association between dietary acrylamide and pancreatic cancer.

Testicular Cancer: Radiotherapy Increases Pancreatic Cancer Risk

[Link](https://www.ncbi.nlm.nih.gov/pubmed/27670615)

Review of: [Link](https://www.ncbi.nlm.nih.gov/pubmed/27599043)

- **Journal:** Nature Reviews Urology
- **Institution(s):** Nature editorial office, London, UK
- **Corresponding author(s):** Peter Sidaway
- **Major finding:** Data from a retrospective study indicate that survivors of testicular cancer whose treatment included abdominal radiotherapy have an increased risk of secondary pancreatic cancer that persists for decades after their original diagnosis.

**EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS**

Assessment of a Revised Management Strategy for Patients with Intraductal Papillary Mucinous Neoplasms Involving the Main Pancreatic Duct

[Link](https://www.ncbi.nlm.nih.gov/pubmed/27829085)

- **Journal:** JAMA Surgery
• Institution(s): David Geffen School of Medicine at University of California, Los Angeles (UCLA), Los Angeles, CA
• Corresponding author(s): Yves Boucher or Alexander Guimaraes
• Pancreatic Cancer Action Network-affiliated author: Yves Boucher, PhD: recipient, 2013 Abby Sobrato – Innovative Grant
• Major finding: Magnetic resonance imaging (MRI) using FDA-approved magnetic iron oxide nanoparticles (MNPs) provides a noninvasive, translatable means of assaying microvascular parameters induced by losartan in pancreatic cancer. Positron emission tomography (PET) measurements demonstrated that losartan, an angiotensin II receptor blocker, significantly increased the uptake of \(^{18}\text{F}-\text{5FU}\).

Noninvasive Assessment of Losartan-Induced Increase in Functional Microvasculature and Drug Delivery in Pancreatic Ductal Adenocarcinoma
• Journal: Translational Oncology
• Institution(s): Massachusetts General Hospital, Charlestown, MA, and others
• Corresponding author(s): Timothy Donahue
• Pancreatic Cancer Action Network-affiliated author: David Dawson, MD, PhD: recipient, 2008 Seena Magowitz – Career Development Award
• Major finding: In this single-center, retrospective analysis, a main pancreatic duct (MPD) diameter of 7.2 mm was identified as an optimal cutoff for a prognostic factor for malignant disease in main duct or mixed intraductal papillary mucinous neoplasm (IPMN). These data support lowering the accepted criteria for MPD diameter when selecting patients for resection vs surveillance so as not to overlook cancer in IPMN.

Circulating Tumor Cells Expressing Markers of Tumor Initiating Cells Predict Poor Survival and Cancer Recurrence in Patients with Pancreatic Ductal Adenocarcinoma
• Journal: Clinical Cancer Research
• Institution(s): Johns Hopkins Medical Institutions, Baltimore, MD
• Corresponding author(s): Katherine Poruk
• Pancreatic Cancer Action Network-affiliated authors:
  • Michael Goggins, MD: PI, 2013 Skip Viragh – Inaugural Research Acceleration Network Grant
  • Zeshaan Rasheed, MD, PhD: recipient, 2010 Tempur-Pedic Retailers – Pathway to Leadership Grant
• Major finding: Circulating tumor cells labeling with one or more markers of tumor initiating cells are found in a majority of pancreatic ductal adenocarcinoma patients and are independently predictive of decreased disease free and overall survival.

Imaging in Pancreatic Disease
• Journal: Nature Reviews Gastroenterology & Hepatology
• Institution(s): University of Virginia, Charlottesville, VA, and others
• Corresponding author(s): Kimberly Kelly
• Pancreatic Cancer Action Network-affiliated authors:
  • Teresa Brentnall, MD: member, Emeritus Scientific and Medical Advisory Board
  • Kimberly Kelly, PhD: recipient, 2007 Laurie and Paul MacCaskill – Career Development Award and member, Emeritus Scientific and Medical Advisory Board
Major finding: In this Review, the authors discuss and identify gaps in the use of imaging techniques for the early detection and appropriate treatment stratification of various pancreatic diseases, including diabetes mellitus, acute and chronic pancreatitis and pancreatic cancer. Imaging techniques discussed are MRI, CT, PET and ultrasonography. Additionally, the identification of new molecular targets for imaging and the development of contrast agents that are able to give molecular information in noninvasive radionuclear imaging and ultrasonography are emerging areas of innovation that could lead to increased diagnostic accuracy and improved patient outcomes.

Type 3c (Pancreatogenic) Diabetes Mellitus Secondary to Chronic Pancreatitis and Pancreatic Cancer

- **Journal:** The Lancet Gastroenterology & Hepatology
- **Institution(s):** The Ohio State University Wexner Medical Center, Columbus, OH, and others
- **Corresponding author(s):** Phil Hart
- **Major finding:** In this Review, the authors discuss the epidemiology, pathogenesis, and clinical relevance of type 3c diabetes secondary to chronic pancreatitis and pancreatic ductal adenocarcinoma, and highlight several important knowledge gaps.

Quantitative Assessment of Pancreatic Cancer Precursor Lesions in IHC-stained Tissue with a Tissue Image Analysis Platform

- **Journal:** Laboratory Investigation
- **Institution(s):** Flagship Biosciences Inc., Westminster, CO, and others
- **Corresponding author(s):** G David Young
- **Major finding:** Together, the authors’ data demonstrated the utility of CellMap to enable objective and quantitative assessments, across entire tissue sections, of pancreatic ductal adenocarcinoma precursor lesions in preclinical and clinical models of this disease to support efforts leading to novel insights into disease progression, diagnostic markers, and potential therapeutic targets.

**TREATMENT**

Preoperative Chemoradiation for Pancreatic Adenocarcinoma Does Not Increase 90-Day Postoperative Morbidity or Mortality

- **Journal:** Journal of Gastrointestinal Surgery
- **Institution(s):** The University of Texas MD Anderson Cancer Center, Houston, TX
- **Corresponding author(s):** Matthew Katz
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Christopher Crane, MD: member, Emeritus Scientific and Medical Advisory Board
  - Eugene Koay, MD, PhD: recipient, 2014 Skip Viragh – Career Development Award
  - Jason Fleming, MD: co-PI, 2015 Research Acceleration Network Grant and member, Scientific and Medical Advisory Board
- **Major finding:** Preoperative chemoradiation is not associated with an increase in 90-day morbidity or mortality, and it may reduce the rate of pancreatic fistula following distal pancreatectomy.

Phase I Study of Safety and Pharmacokinetics of the anti-MUC16 Antibody-drug Conjugate DMUC5754A in Patients with Platinum-resistant Ovarian Cancer or Unresectable Pancreatic Cancer
Association of Distinct Mutational Signatures with Correlates of Increased Immune Activity in Pancreatic Ductal Adenocarcinoma
- **Journal:** JAMA Oncology
- **Institution(s):** Ontario Institute for Cancer Research, Toronto, Ontario, Canada, and others
- **Corresponding author(s):** Steven Gallinger
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Gloria Petersen, PhD: member, Scientific and Medical Advisory Board
  - Michael Hollingsworth, PhD: member, Scientific and Medical Advisory Board
- **Major finding:** Using a discovery/validation cohort study of resected pancreas cancer cases from the International Cancer Genome Consortium, distinct somatic mutational signatures in genomic DNA and RNA were identified. Mutational signatures may guide biomarker development and application of personalized chemo/immunotherapeutic approaches for a subset of patients with pancreas cancer.

Metronomic Chemotherapy Prevents Therapy-induced Stromal Activation and Induction of Tumor-initiating Cells
- **Journal:** The Journal of Experimental Medicine
- **Institution(s):** Taipei Medical University, Taipei, Taiwan, and others
- **Corresponding author(s):** Kelvin Tsai
- **Pancreatic Cancer Action Network-affiliated author:** Valerie Weaver, PhD: recipient, 2013 Blum-Kovler – Innovative Grant
- **Major finding:** These experiments illustrate the importance of stroma in cancer therapy and how its impact on treatment resistance could be tempered by altering the dosing schedule of systemic chemotherapy.

Cytoplasmic HuR Status Predicts Disease-free Survival in Resected Pancreatic Cancer: A Post-hoc Analysis From the International Phase III ESPAC-3 Clinical Trial
- **Journal:** Annals of Surgery
- **Institution(s):** Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, PA, and others
- **Corresponding author(s):** Jonathan Brody
- **Pancreatic Cancer Action Network-affiliated author:** Jonathan Brody, PhD: PI, 2015 Research Acceleration Network Grant and recipient, 2010 Skip Viragh – Career Development Award
• **Major finding:** Patients with high cytoplasmic HuR (cHuR)-expressing tumors may benefit from 5-fluorouracil (5-FU)-based adjuvant therapy as compared to gemcitabine (GEM), whereas those patients with low cHuR appear to have no survival advantage with GEM compared with 5-FU. Further studies are needed to validate HuR as a biomarker in both future monotherapy and multiagent regimens.

A pilot study evaluating concordance between blood-based and patient-matched tumor molecular testing within pancreatic cancer patients participating in the Know Your Tumor (KYT) initiative


- **Journal:** Oncotarget
- **Institution(s):** Perthera, Inc, McLean, VA, and others
- **Corresponding author(s):** Jonathan Brody
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Michael Pishvaian, MD, PhD: co-PI, 2015 Research Acceleration Network Grant (Brody)
  - Lynn Matrisian, PhD, MBA, Pancreatic Cancer Action Network
  - Lola Rahib, PhD, Pancreatic Cancer Action Network
  - Vincent Picozzi, MD: member, Scientific and Medical Advisory Board
  - Subha Madhavan, PhD: co-PI, 2015 Research Acceleration Network Grant (Brody)
  - Emanuel Petricoin III, PhD: co-PI, 2015 Research Acceleration Network Grant (Brody)
  - Jonathan Brody, PhD: PI, 2015 Research Acceleration Network Grant and recipient, 2010 Skip Viragh – Career Development Award

• **Major finding:** The authors’ results suggest that in the setting of previously treated, advanced pancreatic ductal adenocarcinoma, liquid biopsies are not yet an adequate substitute for tissue biopsies. Further refinement in defining the optimal patient population and timing of blood sampling may improve the value of a blood-based test.

**Constitutive IRAK4 Activation Underlies Poor Prognosis and Chemoresistance in Pancreatic Ductal Adenocarcinoma**


- **Journal:** Clinical Cancer Research
- **Institution(s):** Washington University School of Medicine, St. Louis, MO
- **Corresponding author(s):** Kian-Huat Lim
- **Pancreatic Cancer Action Network-affiliated authors:**
  - David DeNardo, PhD: recipient, 2014 Career Development Award
  - Kian-Huat Lim, MD, PhD: recipient, 2016 Laurie MacCaskill – Career Development Award

• **Major finding:** Because NF-κB transcription factors can be activated by the Interleukin-1 Receptor-Associated Kinase (IRAK) downstream of the Toll-like receptors (TLRs), but has not been explored in pancreatic ductal adenocarcinoma (PDAC), the authors sought to investigate the role of IRAK in the pathobiology of PDAC. Their data established IRAK4 as a novel therapeutic target for PDAC treatment. Development of potent IRAK4 inhibitors is needed for clinical testing.

**CXCR2-Dependent Accumulation of Tumor-Associated Neutrophils Regulates T-cell Immunity in Pancreatic Ductal Adenocarcinoma**


- **Journal:** Cancer Immunology Research
- **Institution(s):** University of Pennsylvania, Philadelphia, PA
- **Corresponding author(s):** Robert Vonderheide
• Pancreatic Cancer Action Network-affiliated author: Robert Vonderheide, MD, DPhil: PI, 2013 Tempur-Pedic – Research Acceleration Network Grant in memory of Tim Miller and member, Scientific and Medical Advisory Board
• Major finding: The chemokine receptor CXCR2–ligand axis helps establish an immunosuppressive microenvironment in pancreatic adenocarcinoma, highlighting the potential utility of targeting this axis as a novel therapy for this deadly disease.

Mesothelin Immunotherapy for Cancer: Ready for Prime Time?
• Journal: Journal of Clinical Oncology
• Institution(s): National Cancer Institute, National Institutes of Health, Bethesda, MD, and others
• Corresponding author(s): Raffit Hassan
• Pancreatic Cancer Action Network-affiliated authors:
  o Dung Le, MD: PI, 2014 Fredman Family Foundation – Research Acceleration Network Grant
  o Elizabeth Jaffee, MD: member, Emeritus Scientific and Medical Advisory Board
• Major finding: Two antimesothelin agents are currently in multicenter clinical registration trials for malignant mesothelioma: amatuximab in the first-line setting and anetumab ravidansine as second-line therapy. Phase II randomized clinical trials of *Listeria monocytogenes*–expressing mesothelin (CRS-207) as a boosting agent and in combination with immune checkpoint inhibition for pancreatic cancer are nearing completion. These ongoing studies will define the utility of mesothelin immunotherapy for treating cancer.

Is it Time to Split Strategies to Treat Homologous Recombinant Deficiency in Pancreas Cancer?
• Journal: Journal of Gastrointestinal Oncology
• Institution(s): Memorial Sloan Kettering Cancer Center, NY, and others
• Corresponding author(s): Eileen O’Reilly
• Pancreatic Cancer Action Network-affiliated author: Eileen O’Reilly, MD: member, Scientific and Medical Advisory Board
• Major finding: A subtype of pancreatic adenocarcinoma as characterized by deficiency in homologous recombination exists although the optimal management strategy remains to be fully elucidated.

The Role of Venous and Arterial Resection in Pancreatic Cancer Surgery
• Journal: Annals of Surgical Oncology
• Institution(s): Harvard Medical School, Boston, MA, and others
• Corresponding author(s): Jennifer Tseng
• Pancreatic Cancer Action Network-affiliated author: Jennifer Tseng, MD: recipient, 2006 Samuel Stroum – Young Investigator Award
• Major finding: This review provides an overview of the literature regarding the role of venous and arterial resection in the treatment of pancreatic cancer, with a focus on outcomes including survival, morbidity, and mortality.

Efficacy and Safety Profile of nab-Paclitaxel plus Gemcitabine in Patients with Metastatic Pancreatic Cancer Treated to Disease Progression: A Subanalysis from a Phase 3 Trial (MPACT)
• Journal: BMC Cancer
• **Institution(s):** Medizinische Hochschule Hannover, Hannover, Germany, and others
• **Corresponding author(s):** Arndt Vogel
• **Major finding:** The nab-paclitaxel (nab-P) + gemcitabine (Gem) regimen is an active first-line treatment option; most patients were treated until progressive disease (PD), and this exposure was associated with improved efficacy outcomes. Prolonged first-line treatment exposure and ability to receive subsequent therapies likely contributed to the improved survival among these patients. The authors’ data highlight the importance of managing adverse events and indicate that patients should be treated until PD when possible.

**Impact of SPARC Expression on Outcome in Patients with Advanced Pancreatic Cancer Not Receiving nab-Paclitaxel: A Pooled Analysis from Prospective Clinical and Translational Trials**
• **Journal:** British Journal of Cancer
• **Institution(s):** Ludwig-Maximilians Universität München, Munich, Germany, and others
• **Corresponding author(s):** Stefan Boeck
• **Major finding:** The authors identified cytoplasmic secreted protein acidic and rich in cysteins (SPARC) expression in the primary tumor as a biomarker associated with inferior progression-free survival and overall survival in advanced pancreatic ductal adenocarcinoma. Cytoplasmic SPARC expression may furthermore act as a negative predictive biomarker in patients treated with gemcitabine-based chemotherapy.

**A Holistic Approach to Dissecting SPARC Family Protein Complexity Reveals FSTL-1 as an Inhibitor of Pancreatic Cancer Cell Growth**
• **Journal:** Scientific Reports
• **Institution(s):** Kingston University, Kingston-upon-Thames, UK
• **Corresponding author(s):** Natasha Hill
• **Major finding:** This study underlines the importance of addressing the complexity of the SPARC family and provides a new framework to explain their controversial and contradictory effects. The authors also demonstrate for the first time that FSTL-1 suppresses pancreatic cancer cell growth.

**Genome-wide CRISPR Screens Reveal a Wnt–FZD5 Signaling Circuit as a Druggable Vulnerability of RNF43-mutant Pancreatic Tumors**
• **Journal:** Nature Medicine
• **Institution(s):** University of Toronto, Toronto, Ontario, Canada, and others
• **Corresponding author(s):** Stéphane Angers, Jason Moffat or Sachdev Sidhu
• **Major finding:** The authors conducted genome-wide CRISPR–Cas9 screens in RNF43-mutant pancreatic ductal adenocarcinoma (PDAC) cells, which rely on Wnt signaling for proliferation. Their results show that CRISPR-based genetic screens can be leveraged to identify and validate cell surface targets for antibody development and therapy.

**Pancreatic Cancer Cell Lysis by Cell-Penetrating Peptide-MAGE-A3–Induced Cytotoxic T Lymphocytes**
• **Journal:** JAMA Surgery
• **Institution(s):** Wayne State University School of Medicine, Detroit, MI, and others
• **Corresponding author(s):** Scott Gruber
Major finding: The authors and others have previously demonstrated that cell-penetrating peptide (CPP) effectively increased the intracellular entry of tumor-specific antigens (TSAs). The authors extend this work by investigating whether dendritic cells pulsed with MAGE-A3 (melanoma antigen family A, 3) linked to CPP could elicit more effective antitumor cytotoxic CD8+ T lymphocyte responses.

Tumor-Induced IL-6 Reprograms Host Metabolism to Suppress Anti-tumor Immunity  
- **Journal:** Cell Metabolism  
- **Institution(s):** Ludwig-Maximilians Universität München, Munich, Germany, and others  
- **Corresponding author(s):** Stefan Boeck  
- **Major finding:** Tumor-induced IL-6 impairs the ketogenic response to reduced caloric intake, resulting in a systemic metabolic stress response that blocks anti-cancer immunotherapy.

Impact of a Nationwide Training Program in Minimally Invasive Distal Pancreatectomy (LAELAPS)  
- **Journal:** Annals of Surgery  
- **Institution(s):** University of Cambridge, Cambridge, UK, and others  
- **Corresponding author(s):** Thomas Flint or Tobias Janowitz  
- **Major finding:** A nationwide minimally invasive distal pancreatectomy (MIDP) training program was feasible and followed by a steep increase in the use of MIDP, also in patients with pancreatic cancer, and decreased conversion rates. Future studies should determine whether such a training program is applicable in other settings.

Phycocyanin Inhibits Tumorigenic Potential of Pancreatic Cancer Cells: Role of Apoptosis and Autophagy  
- **Journal:** Scientific Reports  
- **Institution(s):** China Pharmaceutical University, Nanjing, China, and others  
- **Corresponding author(s):** Xiaodong Cheng or Yu Ou  
- **Major finding:** Phycocyanin, a natural product purified from Spirulina, effectively inhibits the pancreatic cancer cell proliferation *in vitro* and xenograft tumor growth *in vivo*. The authors’ studies demonstrate that phycocyanin exerts anti-pancreatic cancer activity by inducing apoptotic and autophagic cell death, thereby identifying phycocyanin as a promising anti-pancreatic cancer agent.

Targeted Delivery of Chemotherapy using HSP90 Inhibitor Drug Conjugates Is Highly Active Against Pancreatic Cancer Models  
- **Journal:** Oncotarget  
- **Institution(s):** Fox Chase Cancer Center, Philadelphia, PA, and others  
- **Corresponding author(s):** Igor Astsaturov  
- **Major finding:** In this study the authors exploited the selective tumor-targeting properties of the heat shock 90 protein inhibitors as the vehicle for drug delivery to pancreatic tumor tissues. STA-12-8666 is a novel esterase-cleavable conjugate of an HSP90i and a topoisomerase I inhibitor, SN-38. Their results provide a proof-of-principle validation that HSP90i-based drug conjugates can overcome the notorious treatment resistance by utilizing the inherently high affinity of pancreatic cancer cells to HSP90 antagonists.
Gold Nanoparticle Reprogramms Pancreatic Tumor Microenvironment and Inhibits Tumor Growth
- **Journal:** ACS Nano
- **Institution(s):** University of Oklahoma Health Science Center, Oklahoma City, OK, and others
- **Corresponding author(s):** Priyabrata Mukherjee
- **Major finding:** The authors demonstrate that gold nanoparticles (AuNPs) inhibit proliferation and migration of both pancreatic cancer cells (PCCs) and the pancreatic stellate cells (PSCs) by disrupting the bidirectional communication via alteration of the cell secretome. AuNPs could potentially be utilized as a tool to effectively interrogate bidirectional communications in the tumor microenvironment, reprogram it, and inhibit tumor growth by its therapeutic function.

Cancer-associated Fibroblast Exosomes Regulate Survival and Proliferation of Pancreatic Cancer Cells
- **Journal:** Oncogene
- **Institution(s):** University of Notre Dame, Notre Dame, IN, and others
- **Corresponding author(s):** Reginald Hill
- **Major finding:** Collectively, the authors’ findings show the potential for exosome inhibitors as treatment options alongside chemotherapy for overcoming pancreatic ductal adenocarcinoma chemoresistance.

Epigenetic Treatment of Pancreatic Cancer: Is There a Therapeutic Perspective on the Horizon?
- **Journal:** Gut
- **Institution(s):** University Medical Center Goettingen, Goettingen, Germany, and others
- **Corresponding author(s):** Volker Ellenrieder
- **Major finding:** This review summarizes both current clinical trial activities and discovery programs initiated throughout the biopharma landscape, and critically discusses the chances, hurdles and limitations of epigenetic-based therapy in future pancreatic ductal adenocarcinoma treatment.

**Industry news:**

Final Results of NAPOLI-1 Study Confirm Overall Survival and Progression-Free Survival Benefit for the ONIVYDE® Regimen for Patients with Metastatic Pancreatic Cancer
- **Company:** Merrimack Pharmaceuticals, Inc., Cambridge, MA
- **Major finding:** Merrimack Pharmaceuticals, Inc. announced final results from the pivotal Phase 3 NAPOLI-1 study validating the use of ONIVYDE® (irinotecan liposome injection) in combination with fluorouracil (5-FU) and leucovorin, which represents a new standard of care for patients with metastatic pancreatic ductal adenocarcinoma (mPDAC) following treatment with gemcitabine-based therapy. The final NAPOLI-1 results were presented in a poster discussion session and a separate analysis of NAPOLI-1 safety-over-time data was presented in a poster session at the European Society for Medical Oncology 2016 Congress in Copenhagen.

OncoVent Initiates Clinical Development Program for Anti-MUC1 MAb AR20.5 for Treatment of Pancreatic Cancer
Company: Quest PharmaTech Inc., Edmonton, Canada

Major finding: OncoQuest Inc., a biopharmaceutical company focused on the development and commercialization of immunotherapeutic products for the treatment of cancer, announced that its Joint Venture Partner in China, OncoVent Co., Ltd. has launched its clinical development program for Anti-MUC1 MAb AR20.5 for the treatment of pancreatic cancer. Anti-MUC1 MAb-AR20.5 is a novel immunotherapeutic drug for investigational use in the treatment of malignancies expressing the tumor-associated antigen known as MUC1.

Provectus Biopharmaceuticals Announces Poster Presentation on PV-10 at Society for Immunotherapy of Cancer 2016 Annual Meeting

https://www.pvct.com/pressrelease.html?article=201611141

Company: Provectus Biopharmaceuticals, Inc., Knoxville, TN

Major finding: Provectus Biopharmaceuticals, Inc., a clinical-stage oncology and dermatology biopharmaceutical company, announced the presentation of data on PV-10 at the Society for Immunotherapy of Cancer 2016 Annual Meeting. Provectus' investigational oncology drug, PV-10, is an ablative immunotherapy under investigation in solid tumor cancers.

Onxeo Announces Promising Results from Preclinical Studies of Livatag® in Pancreatic Cancer


Company: Onxeo S.A., Paris, France, and Copenhagen, Denmark

Major finding: Onxeo S.A., a biopharmaceutical company specializing in the development of innovative drugs for the treatment of orphan diseases, in particular in oncology, announced encouraging results from a series of preclinical studies evaluating Livatag® interest for pancreatic cancer. Livatag® (doxorubicine Transdrug™) is a nanoparticle formulation of doxorubicin.

ADI-PEG 20 Radio-sensitizes Pancreatic Cancer Cells by Amplifying Early Endoplasmic Reticulum Stress


Company: Polaris Group, San Diego, CA

Major finding: Polaris Group announced that ADI-PEG 20, arginine deiminase formulated with polyethylene glycol, can selectively enhance the effect of radiation in argininosuccinate synthetase (ASS1) deficient pancreatic tumors according to results presented by researchers from MD Anderson Cancer Center at the annual meeting of the American Society for Radiation Oncology (ASTRO).

CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH

Assessing the Financial Burden Associated with Treatment Options for Resectable Pancreatic Cancer


Journal: Annals of Surgery

Institution(s): Johns Hopkins University School of Medicine, Baltimore, MD, and others

Corresponding author(s): Timothy Pawlik

Pancreatic Cancer Action Network-affiliated author: Joseph Herman, MD, MSci: recipient, 2008 Blum-Kovler – Career Development Award and member, Scientific and Medical Advisory Board

Major finding: Total payments for an episode of care relative to improvement in survival vary significantly by treatment modality. These data can be used to inform management decisions about
pursuing further care for pancreatic cancer. Future investigations should seek to refine estimates of the cost-effectiveness of different treatments.

Impact of Pancreatectomy on Long-term Patient-reported Symptoms and Quality of Life in Recurrence-free Survivors of Pancreatic and Periampullary Neoplasms
- **Journal:** Journal of Surgical Oncology
- **Institution(s):** The University of Texas MD Anderson Cancer Center, Houston, TX, and others
- **Corresponding author(s):** Matthew Katz
- **Pancreatic Cancer Action Network-affiliated authors:**
  - Maria Petzel, RD: member, Scientific and Medical Advisory Board
  - Jason Fleming, MD: co-PI, 2015 Research Acceleration Network Grant (Der) and member, Scientific and Medical Advisory Board
- **Major finding:** Most disease-free survivors of pancreatic neoplasms report favorable quality of life, but gastrointestinal and psychosocial symptoms may exist long after pancreatectomy.

Keeping it in the Family: The Impact of Marital Status and Next of Kin on Cancer Treatment and Survival
- **Journal:** The American Journal of Surgery
- **Institution(s):** Harvard Medical School, Boston, MA
- **Corresponding author(s):** Jennifer Tseng
- **Pancreatic Cancer Action Network-affiliated author:** Jennifer Tseng, MD: recipient, 2006 Samuel Stroum – Young Investigator Award
- **Major finding:** Marriage was not associated with early diagnosis for any cancer type. After adjustment, being married was associated with significantly higher odds of receiving surgery only for pancreatic cancer and with improved survival for breast and lung cancers. Having a nuclear relationship with next of kin was not associated with any outcomes.