



**Research**

**PANCREATIC CANCER ACTION NETWORK**

ADVANCE RESEARCH. SUPPORT PATIENTS. CREATE HOPE.

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## PANCREATIC CANCER NEWS & UPDATES – APRIL 2013

### Table of Contents

#### Pancreatic Cancer Action Network and Community News

PanCAN news .....	1
Funding opportunities .....	2
Meetings .....	3
Other .....	4

Biology .....	5
---------------	---

Etiology .....	9
----------------	---

Early Detection, Diagnosis, and Prognosis .....	9
-------------------------------------------------	---

Treatment .....	12
-----------------	----

Cancer Control, Survivorship, and Outcomes Research .....	18
-----------------------------------------------------------	----

## **PANCREATIC CANCER ACTION NETWORK AND COMMUNITY NEWS**

### ***PanCAN news:***

#### ***Announcing our 2013 research grant recipients:***

**More than \$5 million in research grants awarded by the Pancreatic Cancer Action Network and AACR**

[http://pancan.org/section\\_about/news\\_press\\_center/2013\\_press\\_releases/04\\_10\\_13\\_pr.php#.UZLJ6bVlk2c](http://pancan.org/section_about/news_press_center/2013_press_releases/04_10_13_pr.php#.UZLJ6bVlk2c)

The Pancreatic Cancer Action Network and the American Association for Cancer Research (AACR) awarded 14 grants totaling more than \$5 million to outstanding scientists throughout the country, supporting their innovative research in the field of pancreatic cancer. In an effort to speed advances in the field, the organizations have awarded two Inaugural Research Acceleration Network (RAN) grants totaling \$1 million each.

#### **UNMC scientist's research may hold key to surviving pancreatic cancer**

[http://journalstar.com/lifestyles/health-med-fit/unmc-scientist-s-research-may-hold-key-to-surviving-pancreatic/article\\_a9248582-60da-54e7-8542-5c90d2d539d2.html](http://journalstar.com/lifestyles/health-med-fit/unmc-scientist-s-research-may-hold-key-to-surviving-pancreatic/article_a9248582-60da-54e7-8542-5c90d2d539d2.html)

Pankaj Singh, PhD (2013 Career Development Award) was highlighted in this *Lincoln Journal Star* article. Dr. Singh and his team will study the metabolism of pancreatic cancer tumor cells and see just what is happening on a microscopic level that prevents chemotherapy from working.

#### **Pancreatic cancer research gets a boost with grant to Pitt doctor**

<http://www.post-gazette.com/stories/news/health/underfunded-pancreatic-cancer-research-gets-a-boost-683510/>

*Pittsburgh Post-Gazette* ran an article featuring Daolin Tang, PhD, recipient of a 2013 Career Development Award. Dr. Tang is studying the high-mobility group protein B1 -- or HMGB1 -- to determine its function in inflammation, immunity and creation of pancreatic cancer.

#### **Four Penn researchers win grants for pancreatic cancer**

[http://articles.philly.com/2013-04-11/news/38437233\\_1\\_cancer-research-pancreatic-cancer-action-network-grant](http://articles.philly.com/2013-04-11/news/38437233_1_cancer-research-pancreatic-cancer-action-network-grant)

The *Philadelphia Inquirer* announces the four University of Pennsylvania researchers awarded research grants: Robert Vonderheide, MD, DPhil, Anil Rustgi, MD, Andy Rhim, MD, and Celeste Simon, PhD.

### ***Other PanCAN news:***

#### **Pancreatic cancer researchers & advocates to join Rally for Medical Research**

[http://pancan.org/section\\_about/news\\_press\\_center/2013\\_press\\_releases/04\\_08\\_13\\_pr.php#.UZLHfbVlk2c](http://pancan.org/section_about/news_press_center/2013_press_releases/04_08_13_pr.php#.UZLHfbVlk2c)

Researchers and advocates from the Pancreatic Cancer Action Network joined nearly 200 national organizations in demonstrating their concern about the impact of sequestration on cancer research during the Rally for Medical Research in Washington, D.C. This unified call to action was intended to raise awareness about the critical need for a sustained investment in the National Institutes of Health (NIH) to improve health, spur more progress, inspire more hope and save more lives.

**Physician-scientist Anirban Maitra brings leading expertise to leadership role at UT MD Anderson**

<http://www.mdanderson.org/newsroom/news-releases/2013/pancreatic-cancer-research-leadership.html>

Anirban Maitra, MBBS (2004 Career Development Award and chair, Scientific Advisory Board) will lead research at a new center at The University of Texas M.D. Anderson Cancer Center devoted to pancreatic cancer. Maitra becomes co-director and scientific director of the Sheikh Ahmed Bin Zayed Al Nahyan Center for Pancreatic Cancer Research on Aug. 1, bringing his passion for improving patients' survival by discovering and developing ways to detect and treat pancreatic cancer to Houston.

**Research team recognized for advancing pancreatic cancer through innovative, collaborative science**

<http://www.aacr.org/home/public--media/aacr-in-the-news.aspx?d=3082>

*Pancreatic Cancer Action Network write-up:*

[http://pancan.org/section\\_research/strategic\\_research\\_program/news/topic\\_aacr\\_annual\\_meeting\\_2013.php](http://pancan.org/section_research/strategic_research_program/news/topic_aacr_annual_meeting_2013.php)

The Pancreatic Cancer Sequencing Team in the Sol Goldman Pancreatic Cancer Research Center at Johns Hopkins University received the Seventh Annual AACR Team Science Award during the American Association for Cancer Research's Annual Meeting 2013, held in Washington, D.C., April 6-10. The team included current and past Pancreatic Cancer Action Network research grant recipients as well as members of our Scientific and Medical Advisory Boards.

***Funding opportunities:***

***New!* Department of Defense Peer Reviewed Cancer Research Program**

<http://cdmrp.army.mil/pubs/press/2013/13prcrppreann.shtml>

Congressionally directed topic areas for FY13 Peer Reviewed Cancer Research Program (PRCRP) include pancreatic cancer. \*\*Please note that, new for FY13, applications must also fit into a military relevance focus area.\*\* The PRCRP is providing the information in this pre-announcement to allow investigators time to plan and develop applications.

***New!* Lustgarten Foundation research funding opportunities**

<http://www.lustgarten.org/researchfundingopportunities>

For the 2013 Grant application cycle, The Foundation's Scientific Review Board has identified a number of research areas for which proposals are now being solicited. Letters of intent are due by 5 p.m. ET, May 24, 2013.

**Clinical Assay Development Program (CADP)**

<http://cadp.cancer.gov/>

The NCI Clinical Assay Development Program (CADP) is requesting project applications from investigators in academia, government and industry seeking clinical assay validation resources. These resources are designed to assist with the development of assays that may predict therapy response or prognostic behavior of a diagnosed cancer, primarily for use in clinical trials. Remaining 2013 application deadlines: June 15 and October 15.

**Share your federal funding experiences: Help our advocacy efforts**

[http://www.pancan.org/section\\_research/resources\\_for\\_scientists/form\\_funding\\_experiences.php](http://www.pancan.org/section_research/resources_for_scientists/form_funding_experiences.php)

Have you struggled to receive grants from the NCI or other federal institutions? Have you been successful? We're looking for information to help us understand what is working well for pancreatic cancer researchers and what could be improved (including, but not limited to, funding levels). We will use this information in our public policy efforts. Please click above and share your stories (they can be submitted anonymously).

### **2012 RFA Links and Provocative Questions**

<http://provocativequestions.nci.nih.gov/rfa>

The provocative questions (PQ) project is intended to assemble a list of important but non-obvious questions that will stimulate the NCI's research communities to use laboratory, clinical, and population sciences in especially effective and imaginative ways. For the current issuance of the PQ Program, the original list of PQs is now updated to a set of 24 PQs. The new/updated PQs have been divided into four groups, resulting in four R01 FOAs and four R21 FOAs, with LOI deadlines of May 20, 2013.

### **Pancreas Cancer Research Fellowship at Virginia Mason Cancer Center**

<http://jobs.virginiamason.org/job/Seattle-Pancreas-Cancer-Research-Fellowship-Job-WA-98101/1913701/>

Virginia Mason Cancer Center in Seattle is now accepting applications for a Pancreas Cancer Research Fellowship (PCRF) program and hopes to have their first PCRF fellow start on July 1, 2013 (the beginning of the next academic year). Vincent J. Picozzi, Jr., MD (Medical Advisory Board) is the Fellowship Director for this program. More information about the Digestive Disease Institute can be found here: <https://www.virginiamason.org/ddi>.

### **Support of the Cancer Genome Atlas Program (TCGA): Funding opportunity**

<http://www.fdbdo.com/s12-335/>

Financial support is available for submissions to the TCGA pancreas project. Please see the note from Kenna Shaw, PhD of the TCGA Program Office:

“Because of the poor prognosis and overall public health impact, pancreatic ductal adenocarcinoma has been selected to be studied by TCGA. However, the pancreatic cancer project might end before it even begins unless more collaborators provide tissue samples. The collapse of this research project would be a lost opportunity for the pancreatic cancer community ... If you have frozen, untreated samples in your tissue bank accompanied by blood, please help by providing them, either retrospectively or prospectively, to TCGA.”

### **Meetings:**

#### **The 2013 Gordon Conference on Pancreatic Diseases**

<http://www.grc.org/programs.aspx?year=2013&program=pancreatic>

- July 21-26, 2013, Mount Holyoke College, South Hadley, MA
- Application deadline: June 23, 2013
- The 2013 Gordon Conference on Pancreatic Diseases will present cutting-edge research on the clinical, molecular, and cellular perspective of functional and pathological aspects of pancreas biology. The broad scope of this conference is to support the development of a multi-disciplinary research community addressing medical, biological, chemical, and pharmacological

topics related to the diversity and complexity of pancreatic diseases. *Note: the Pancreatic Cancer Action Network has provided a travel award for this meeting.*

**Pancreatic Cancer: Salerno 2013**

<http://www.biouniversa.com/meeting.aspx>

- June 20-21, 2013, Grand Hotel Salerno, Italy
- Deadlines:
  - May 31st: Late registration
- The meeting plans to provide a forum to discuss advances in the diagnosis and treatment of pancreatic adenocarcinoma.

***Other community news:***

**The Conspiracy To End Cancer**

<http://healthland.time.com/2013/04/01/the-conspiracy-to-end-cancer/>

This *Time* article highlights team science efforts in cancer research, with specific focus on the SU2C Dream Teams. Pancreatic cancer is discussed in the context of circulating tumor cells and the pancreatic cancer dream team headed by Drs. Craig Thompson (Scientific Advisory Board) and Daniel Von Hoff.

## **BIOLOGY OF CANCER**

### **Hypoxia triggers Hedgehog-mediated tumor stromal interactions in pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23633488>

- Journal: *Cancer Research*
- Institution(s): MD Anderson Cancer Center, Houston, TX and others
- Corresponding author(s): Garth Powis
- PanCAN-affiliated author: Sunil Hingorani, MD, PhD: 2007 Pilot Grant and 2005 Dr. Laurence A. Mack and Roselle Mack – Career Development Award
- Major finding: The authors' findings suggest that increased HIF-1 $\alpha$  produced by hypoxic tumors triggers the desmoplastic reaction in pancreatic cancer, which is then amplified by a feed forward loop involving cycles of decreased blood flow and increased hypoxia. The authors' findings strengthen the rationale for testing HIF inhibitors may therefore represent a novel therapeutic option for pancreatic cancer.

### **Dynamic mast cell-stromal cell interactions promote growth of pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23633481>

- Journal: *Cancer Research*
- Institution(s): MD Anderson Cancer Center, Houston, TX and others
- Corresponding author(s): Stephen Ullrich
- PanCAN-affiliated author: Craig Logsdon, PhD: Scientific Advisory Board
- Major finding: The authors' findings suggest that mast cells exacerbate the cellular and extracellular dynamics of the tumor microenvironment found in pancreatic cancer. Therefore, targeting mast cells may inhibit stromal formation and improve therapy.

### **ERK2-regulated TIMP1 induces hyperproliferation of K-Ras (G12D)-transformed pancreatic ductal cells**

<http://www.ncbi.nlm.nih.gov/pubmed/23555182>

- Journal: *Neoplasia*
- Institution(s): Drexel University College of Medicine, Philadelphia, PA and others
- Corresponding author(s): Peter Lelkes
- PanCAN-affiliated author: Anil Rustgi, MD: Scientific Advisory Board
- Major finding: Overall, tissue inhibitor of matrix metalloproteinase 1 (TIMP1) is an upregulated gene product and a proliferative inducer of K-Ras(G12D)-mutated pancreatic ductal cells through the ERK2 signaling pathway.

### **Pancreatic cancer: Novel pathway identified for glutamine metabolism in PDAC**

<http://www.ncbi.nlm.nih.gov/pubmed/23545520>

- Journal: *Nature Reviews Gastroenterology and Hepatology*
- Corresponding author(s): Claire Greenhill, Associate Editor
- Major finding: This article is a review of last month's *Son et al Nature* article (<http://www.ncbi.nlm.nih.gov/pubmed/23535601>), reporting that pancreatic ductal adenocarcinoma (PDAC) cells utilize a novel glutamine metabolism pathway that is essential for tumor growth.

**Lysine-5 acetylation negatively regulates lactate dehydrogenase a, is decreased in pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23523103>

- Journal: *Cancer Cell*
- Institution(s): Fudan University, Shanghai, China and others
- Corresponding author(s): Yue Xiong, Qun-Ying Lei, and Kun-Liang Guan
- Major finding: Tumor cells commonly have increased glucose uptake and lactate accumulation. The authors' study reveals a mechanism of lactate dehydrogenase A (LDH-A) upregulation in pancreatic cancers.

**Stem cell marker nestin is critical for TGF beta1-mediated tumor progression in pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23552743>

- Journal: *Molecular Cancer Research*
- Institution(s): National Sun Yat-Sen University, Kaohsiung, Taiwan and others
- Corresponding author(s): Kuang-Hung Cheng
- Major finding: The authors' findings uncovered a novel role of nestin in regulating TGF- $\beta$ 1-induced epithelial-mesenchymal transition. Anti-nestin therapeutics is under development as a potential treatment for pancreatic cancer metastasis.

**Menin epigenetically represses Hedgehog signaling in MEN1 tumor syndrome**

<http://www.ncbi.nlm.nih.gov/pubmed/23580576>

- Journal: *Cancer Research*
- Institution(s): University of Pennsylvania, Philadelphia, PA and others
- Corresponding author(s): Eithne Costello
- Major finding: The presence-absence of jaundice in the clinical scenario severely impacts the performance of biomarkers for PDAC diagnosis and has implications for their clinical translation.

**Lithium inhibits tumorigenic potential of PDA cells through targeting hedgehog-GLI signaling pathway**

<http://www.ncbi.nlm.nih.gov/pubmed/23626687>

- Journal: *PLoS One*
- Institution(s): China Pharmaceutical University, Nanjing, China and others
- Corresponding author(s): Xiaodong Cheng and Yu Ou
- Major finding: Lithium, a clinical mood stabilizer for mental disorders, potently inhibits the activity of glycogen synthase kinase 3 $\beta$  (GSK3 $\beta$ ) that promotes the ubiquitin-dependent proteasome degradation of GLI1, an important downstream component of hedgehog signaling. Herein, the authors report that lithium inhibits cell proliferation, blocks G1/S cell-cycle progression, induces cell apoptosis and suppresses tumorigenic potential of pancreatic cancer cells through down-regulation of the expression and activity of GLI1. Moreover, lithium synergistically enhances the anti-cancer effect of gemcitabine.

**GSK-3 $\alpha$  promotes oncogenic KRAS function via TAK1-TAB stabilization non-canonical NF- $\kappa$ B**

<http://www.ncbi.nlm.nih.gov/pubmed/23547054>

- Journal: *Cancer Discovery*
- Institution(s): UNC-Chapel Hill, Chapel Hill, NC

- Corresponding author(s): Albert Baldwin
- Major finding: The authors' data identify GSK-3 $\alpha$  as a key downstream effector of oncogenic KRAS via its ability to coordinately regulate distinct NF- $\kappa$ B signaling pathways.

**Anti-pancreatic cancer deliverables from sea: first-hand evidence from five different brown-algae**

<http://www.ncbi.nlm.nih.gov/pubmed/23613993>

- Journal: *PLoS One*
- Institution(s): University of Oklahoma Health Sciences Center, Oklahoma City, OK and others
- Corresponding author(s): Natarajan Aravindan
- Major finding: Together, the authors' data suggest that intermediate polarity based fractions of seaweed polyphenols may significantly potentiate tumor cell killing and may serve as potential drug deliverable for a pancreatic cancer cure. More studies dissecting out the active constituents in potent fractions, mechanisms of action and synergism, if any, are warranted and are currently in process.

**Nr5a2 heterozygosity sensitises, cooperates with, inflammation KRasG12V pancreatic tumourigenesis**

<http://www.ncbi.nlm.nih.gov/pubmed/23598351>

- Journal: *Gut*
- Institution(s): Spanish National Cancer Research Center, Madrid, Spain and others
- Corresponding author(s): Francisco Real
- Major finding: Nr5a2 participates in biliary acid metabolism and is a major regulator of the pancreatic exocrine program. A full Nr5a2 dose is required to restore pancreatic homeostasis upon damage and to suppress the KRasG12V-driven mouse pancreatic intraepithelial neoplasia progression, indicating that Nr5a2 is a novel pancreatic tumour suppressor. Nr5a2 could contribute to pancreatic cancer through a role in the recovery from pancreatitis-induced damage.

**Dysregulated expression of FOXM1 isoforms drive progression of pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23598278>

- Journal: *Cancer Research*
- Institution(s): MD Anderson Cancer Center, Houston, TX and others
- Corresponding author(s): Keping Xie
- Major finding: The authors demonstrated that overexpression of specific transcription factor Forkhead box M1 (FOXM1) isoforms critically regulates pancreatic cancer development and progression by enhancing tumor cell invasion and metastasis. Their findings strongly suggest that targeting specific FOXM1 isoforms effectively attenuates pancreatic cancer development and progression.

**Dual roles of hemidesmosomal proteins in pancreatic epithelium: phosphoinositide 3-kinase decides**

<http://www.ncbi.nlm.nih.gov/pubmed/23624916>

- Journal: *Oncogene*
- Institution(s): INSERM, Toulouse, France and others
- Corresponding author(s): Corinne Bousquet

- **Major finding:** The authors conclude that mature type-1 hemidesmosomes are critical anchoring structures for the pancreatic ductal epithelium whose disruption, upon PI3K activation during carcinogenesis, provokes pancreatic cancer cell migration and invasion.

#### **Hyper-O-GlcNAcylation is anti-apoptotic and maintains NF- $\kappa$ B activity in pancreatic cancer cells**

<http://www.ncbi.nlm.nih.gov/pubmed/23592772>

- **Journal:** *The Journal of Biological Chemistry*
- **Institution(s):** Drexel University College of Medicine, Philadelphia, PA and others
- **Corresponding author(s):** Keith Vosseller
- **Major finding:** The authors' data indicates that hyper-O-GlcNAcylation is anti-apoptotic and contributes to NF- $\kappa$ B oncogenic activation in pancreatic ductal adenocarcinoma.

#### **Cancer stem cells: The challenges ahead**

<http://www.ncbi.nlm.nih.gov/pubmed/23548926>

- **Journal:** *Nature Cell Biology*
- **Institution(s):** University of Amsterdam, Amsterdam, The Netherlands
- **Corresponding author(s):** Jan Paul Medema
- **Major finding:** The author discusses the challenges in identifying cancer stem cells, their dependency on a supportive niche and their role in metastasis, and propose that stemness is a flexible — rather than fixed — quality of tumor cells that can be lost and gained.

## **ETIOLOGY**

### **Meat-related mutagens and pancreatic cancer: null results from a clinic-based case-control study**

<http://www.ncbi.nlm.nih.gov/pubmed/23632817>

- Journal: *Cancer Epidemiology, Biomarkers & Prevention*
- Institution(s): Mayo Clinic, Rochester, MN and others
- Corresponding author(s): Rick Jansen
- PanCAN-affiliated author: Gloria Petersen, PhD: Scientific Advisory Board
- Major finding: The authors' results do not support an association between well-done meat or meat-related mutagen intake and pancreatic cancer and contrast with generally increased risks reported in previous studies. These data contribute to evidence regarding pancreatic cancer and potentially carcinogenic compounds in meat.

## **EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS**

### **Plectin-1 targeted AAV vector for the molecular imaging of pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23616947>

- Journal: *Frontiers in Oncology*
- Institution(s): University of Virginia, Charlottesville, VA and others
- Corresponding author(s): Kimberly Kelly
- PanCAN-affiliated authors:
  - Craig Logsdon, PhD: Scientific Advisory Board
  - Kim Kelly, PhD: 2007 Laurie and Paul MacCaskill – Career Development Award
- Major finding: The authors' results establish proof-of-principle for the ability of Plectin-1 Targeting Peptide (PTP)-modified adeno-associated virus capsids to selectively target gene delivery to pancreatic cancer cells in vivo, which opens promising new avenues for the early detection, diagnosis, and treatment of pancreatic cancer.

### **Screening and surgical outcomes of familial pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23632149>

- Journal: *Surgical Clinics of North America*
- Institution(s): University of Washington, Seattle, WA
- Corresponding author(s): Adam Templeton
- PanCAN-affiliated author: Teri Brentnall, MD: Emeritus Scientific Advisory Board
- Major finding: This article reviews the genetics and incipient pathology of familial pancreatic cancer and the screening modalities in current use, and summarizes the outcomes of reported screening programs.

### **Clinical importance of familial pancreatic cancer registry in Japan: a report from kick-off meeting**

<http://www.ncbi.nlm.nih.gov/pubmed/23604538>

- Journal: *Journal of Hepato-Biliary-Pancreatic Sciences*
- Institution(s): Teikyo University School of Medicine, Tokyo, Japan and others
- Corresponding author(s): Keita Wada
- PanCAN-affiliated authors:
  - Ralph Hruban, MD: Emeritus Scientific Advisory Board

- Teri Brentnall, MD: Emeritus Scientific Advisory Board
- **Major finding:** There is a need for familial pancreatic cancer registries in Japan as cancer risk varies among different populations and discoveries made in Western populations may not translate to the Japanese population. These registries in Japan will align with ongoing international efforts and add to a better understanding of the natural history, risk factors, screening strategies, and responsible genes, for improving survival of this dismal disease.

#### **Pancreatic neuroendocrine neoplasms: diagnosis and management**

<http://www.ncbi.nlm.nih.gov/pubmed/22707246>

- **Journal:** *Abdominal Imaging*
- **Institution(s):** MD Anderson Cancer Center, Houston, TX
- **Corresponding author(s):** Aparna Balachandran
- **PanCAN-affiliated author:** Jason Fleming, MD: Medical Advisory Board
- **Major finding:** A review of the nomenclature, staging, and imaging of pancreatic neuroendocrine neoplasms is presented in this paper.

#### **Ultrasound-guided vs. endoscopic ultrasound-guided fine-needle aspiration for diagnosis**

<http://www.ncbi.nlm.nih.gov/pubmed/23613631>

- **Journal:** *World Journal of Gastroenterology*
- **Institution(s):** Cancer Institute Hospital, Tokyo, Japan and others
- **Corresponding author(s):** Masato Matsuyama
- **Major finding:** EUS-FNA, as well as percutaneous needle aspiration, is an effective modality to obtain cytopathological confirmation in patients with advanced pancreatic cancer.

#### **Preoperative classification of pancreatic cystic neoplasms: clinical significance of diagnostic inaccuracy**

<http://www.ncbi.nlm.nih.gov/pubmed/23595223>

- **Journal:** *Annals of Surgical Oncology*
- **Institution(s):** University of Wisconsin School of Medicine and Public Health, Madison, WI
- **Corresponding author(s):** Clifford Cho
- **Major finding:** Precise, preoperative classification of pancreatic cystic neoplasms (PCN) is frequently incorrect but results in appropriate clinical decision-making in three-quarters of cases. However, one in five pancreatic resections performed for PCN was for benign disease with no malignant potential. An appreciation for the rate of diagnostic inaccuracies should inform our operative management of PCN.

#### **KRAS mutant allele-specific imbalance is associated with worse prognosis in pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23599154>

- **Journal:** *Modern Pathology*
- **Institution(s):** University of Pittsburgh Medical Center, Pittsburgh, PA
- **Corresponding author(s):** Simion Chiosea
- **Major finding:** The authors' findings suggest that in a subset of ductal adenocarcinomas, KRAS mutant allele-specific imbalance correlates with the progression to undifferentiated carcinoma of the pancreas.

### **iTRAQ reveals candidate pancreatic cancer serum biomarkers: influence of obstructive jaundice**

<http://www.ncbi.nlm.nih.gov/pubmed/23579209>

- Journal: *British Journal of Cancer*
- Institution(s): University of Liverpool, Liverpool, UK and others
- Corresponding author(s): Xianxin Hua
- Major finding: Multiple endocrine neoplasia type 1 (MEN1) is an inherited tumor syndrome that includes susceptibility to pancreatic islet tumors. The authors' findings uncover a novel link between menin and Hedgehog signaling whereby menin/PRMT5 epigenetically suppresses Hedgehog signaling, revealing it as a target for treating MEN1 tumors.

### **Cytokeratin 19-fragments as a novel serum biomarker for response and survival**

<http://www.ncbi.nlm.nih.gov/pubmed/23579210>

- Journal: *British Journal of Cancer*
- Institution(s): Ludwig-Maximilians-University of Munich, Munich, Germany
- Corresponding author(s): Stefan Holdenrieder
- Major finding: Cytokeratin 19-fragments (CYFRA 21-1) may serve as a valuable tool for monitoring treatment response and assessing prognosis in advanced pancreatic cancer.

### **Hepatic arterial nodal metastases in pancreatic cancer: Is this the node of importance?**

<http://www.ncbi.nlm.nih.gov/pubmed/23588624>

- Journal: *Journal of Gastrointestinal Surgery*
- Institution(s): Memorial Sloan-Kettering Cancer Center, New York, NY
- Corresponding author(s): Peter Allen
- Major finding: Overall survival (OS) and disease-free survival (DFS) are significantly reduced in patients with a positive hepatic artery lymph node. Differentiation and lymph node status were predictors of OS and DFS. In the multivariate models, differentiation and lymph node status remain independent predictors of OS and DFS.

### **Immunomedics announces clivatuzumab blood test can differentiate pancreatic cancer, pancreatitis**

<http://www.immunomedics.com/pdfs/news/2013/pr04082013a.pdf>

Immunomedics, Inc. announced at the AACR Annual Meeting that the Company's humanized antibody, clivatuzumab, is specifically reactive with pancreatic ductal adenocarcinoma and does not react with chronic pancreatitis tissues. In the current study, 64% of patients with confirmed early-stage disease and 85% with advanced disease were found to have the PAM4-antigen detected by clivatuzumab.

## **TREATMENT**

### **CD40 immunotherapy for pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23589109>

- Journal: *Cancer Immunology, Immunotherapy*
- Institution(s): University of Pennsylvania, Philadelphia, PA
- Corresponding author(s): Robert Vonderheide
- PanCAN-affiliated author: Bob Vonderheide, MD, DPhil: PI of 2013 Tempur-Pedic – Inaugural Research Acceleration Network Grant in Memory of Tim Miller and member, Scientific Advisory Board
- Major finding: The authors describe both laboratory and clinical efforts to target the CD40 pathway for immunotherapy in pancreatic cancer. Findings suggest that CD40 agonists can mediate both T-cell-dependent and T-cell-independent immune mechanisms of tumor regression in mice and patients.

### **Dimethylaminoparthenolide and gemcitabine: a survival study using a genetically engineered mouse**

<http://www.ncbi.nlm.nih.gov/pubmed/23590467>

- Journal: *BMC Cancer*
- Institution(s): Indiana University School of Medicine, Indianapolis, IN and others
- Corresponding author(s): Michele Yip-Schneider and C. Max Schmidt
- PanCAN-affiliated author: Max Schmidt, MD, PhD: 2003 Career Development Award
- Major finding: The authors' findings provide preclinical evidence supporting further evaluation of agents such as the novel NFκB inhibitor dimethylaminoparthenolide (DMAPT) and gemcitabine for the prevention and treatment of pancreatic cancer.

### **Randomised, placebo-controlled, double-blind, parallel-group phase III study evaluating aflibercept**

<http://www.ncbi.nlm.nih.gov/pubmed/23642329>

- Journal: *European Journal of Cancer*
- Institution(s): Hôpital Européen Georges Pompidou, Paris, France and others
- Corresponding author(s): Philippe Rougier
- PanCAN-affiliated author: Philip Philip, MD, PhD: Medical Advisory Board
- Major finding: This phase III study investigated the addition of aflibercept (a soluble decoy receptor that binds to vascular endothelial growth factors), to gemcitabine, in patients with advanced pancreatic cancer. Adding aflibercept to gemcitabine did not improve OS in patients with metastatic pancreatic cancer.

### **Phase III study of gemcitabine plus S-1, S-1 alone, or gemcitabine: GEST study**

<http://www.ncbi.nlm.nih.gov/pubmed/23547081>

- Journal: *Journal of Clinical Oncology*
- Institution(s): Tokyo Women's Medical University, Tokyo, Japan and others
- Corresponding author(s): Takuji Okusaka
- Major finding: Monotherapy with S-1 (an orally bioavailable fluoropyrimidine antagonist) demonstrated noninferiority to gemcitabine in overall survival with good tolerability and

presents a convenient oral alternative for locally advanced and metastatic pancreatic cancer.  
*Please see editorial below.*

### **Evolving panorama of treatment for metastatic pancreas adenocarcinoma**

<http://www.ncbi.nlm.nih.gov/pubmed/23547071>

- Journal: *Journal of Clinical Oncology*
- Institution(s): Memorial Sloan-Kettering Cancer Center, New York, NY
- Corresponding author(s): Eileen O'Reilly
- PanCAN-affiliated author: Eileen O'Reilly, MD: Medical Advisory Board
- Major finding: *Editorial about S-1 study above.* The immediate future will be focused on integrating these new therapies in light of an improved understanding of the biology of pancreas cancer and identifying optimal treatment choices for a given individual with the ongoing quest of identifying validated biomarkers. The results of the Gemcitabine and S1 Trial (GEST) trial provide support for S-1 in the treatment of pancreas cancer and further endorse a platform of a nongemcitabine based backbone on which to develop new efforts.

### **Stereotactic body radiation therapy for locally advanced and borderline resectable pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23562768>

- Journal: *International Journal of Radiation Oncology \* Biology \* Physics*
- Institution(s): H. Lee Moffitt Cancer Center, Tampa, FL
- Corresponding author(s): Ravi Shridhar
- PanCAN-affiliated author: Mo Malafa, MD: Medical Advisory Board
- Major finding: Stereotactic body radiation therapy (SBRT) safely facilitates margin-negative resection in patients with borderline resectable pancreatic cancer while maintaining a high rate of local control in unresectable patients. These data support the expanded implementation of SBRT for pancreatic cancer.

### **The influence of adjuvant radiotherapy dose on overall survival in resected pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23625519>

- Journal: *Cancer*
- Institution(s): Emory University, Atlanta, GA
- Corresponding author(s): William Hall
- Major finding: Adjuvant radiotherapy (A-RT) doses of < 40 Gy, 40 Gy to < 50 Gy, and ≥ 55 Gy were found to be associated with an inferior overall survival (OS). The dose of A-RT delivered appears to influence OS and a prospective study evaluating the addition of optimally delivered A-RT for patients with resected pancreatic cancer is needed.

### **Nontoxic radioactive *Listeria*<sup>at</sup> is a highly effective therapy against metastatic pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23610422>

- Journal: *PNAS*
- Institution(s): Albert Einstein College of Medicine, Bronx, NY
- Corresponding author(s): Ekaterina Dadachova and Claudia Gravekamp

- **Major finding:** This is the first report of using live attenuated bacteria delivering a highly radioactive payload to the metastases, resulting in killing tumor cells in vivo without harming normal cells. The nontoxic radioactive *Listeria*<sup>at</sup> treatment is attractive for clinical development as a therapy to prevent pancreatic cancer recurrence and metastases.

### **Radioactive bacteria attack cancer**

<http://www.nature.com/news/radioactive-bacteria-attack-cancer-1.12841>

This *Nature* news article discusses the above radioactive *Listeria* paper, and includes commentary from several prominent scientists, including Emeritus Scientific Advisory Board member Liz Jaffee, MD and Medical Advisory Board member Joe Herman, MD.

### **Gemcitabine plus capecitabine in unselected patients with advanced pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23462324>

- **Journal:** *Pancreas*
- **Institution(s):** Christie Hospital Foundation Trust, Manchester, UK
- **Corresponding author(s):** Ian Chau
- **Major finding:** Gemcitabine in combination with capecitabine (GEMCAP) is effective and tolerable in unselected patients with advanced pancreatic cancer, and outcomes are comparable with those of patients receiving GEMCAP in clinical trials.

### **A phase II trial of nab-Paclitaxel as second-line therapy in patients with advanced pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/22307213>

- **Journal:** *American Journal of Clinical Oncology*
- **Institution(s):** University of Miami, Miami, FL and others
- **Corresponding author(s):** Caio Rocha Lima
- **Major finding:** In a phase II trial of patients with advanced pancreatic cancer, nab-Paclitaxel was well tolerated, and it demonstrated preliminary evidence of activity in a subset of patients who progressed on gemcitabine-based therapy.

### **Advanced-stage pancreatic cancer: therapy options**

<http://www.ncbi.nlm.nih.gov/pubmed/23629472>

- **Journal:** *Nature Reviews Clinical Oncology*
- **Institution(s):** Heidelberg University Hospital, Heidelberg, Germany
- **Corresponding author(s):** Markus Büchler
- **Major finding:** This review summarizes the current evidence and discusses available treatment options for both locally advanced and metastatic pancreatic adenocarcinoma.

### **Minimally invasive surgical techniques for pancreatic cancer: ready for prime time?**

<http://www.ncbi.nlm.nih.gov/pubmed/23591745>

- **Journal:** *Journal of Hepato-Biliary-Pancreatic Sciences*
- **Institution(s):** Mayo Clinic, Jacksonville, FL
- **Corresponding author(s):** Horacio Asbun

- **Major finding:** The location of the tumor within the pancreas remains the most critical factor in the use of laparoscopy as the standard of care. Lesions in the body and tail, which are readily resected with a distal or subtotal pancreatectomy should be performed laparoscopically unless there is a clear reason why not to do so. Lesions in the head of the pancreas have been shown to be removed safely and effectively with laparoscopy. However, the technical skills necessary and the ability to teach these to trainees are the limiting factors to widespread use. Further series are necessary to assess if the laparoscopic approach to pancreaticoduodenectomy will play a similar role as the one it plays in the surgical treatment for distal lesions.

#### **Short term chemotherapy followed by radiofrequency ablation in stage III pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23591744>

- **Journal:** *Journal of Hepato-Biliary-Pancreatic Sciences*
- **Institution(s):** University of Verona, Verona, Italy
- **Corresponding author(s):** Isabella Frigerio
- **Major finding:** The authors' results do not support the adoption of a short chemotherapy as a way to identify patients to treat with radiofrequency ablation (RFA) with the most benefit. Based on this and by knowing the role of immune modulation after RFA and its specific involvement in pancreatic carcinoma, we can propose RFA as upfront treatment.

#### **Radiofrequency ablation for unresectable locally advanced pancreatic cancer: a systematic review**

<http://www.ncbi.nlm.nih.gov/pubmed/23600801>

- **Journal:** *HPB*
- **Institution(s):** University Medical Centre Utrecht, Utrecht, The Netherlands and others
- **Corresponding author(s):** Izaak Quintus Molenaar
- **Major finding:** Radiofrequency ablation (RFA) seems to be feasible and safe when it is used with the correct temperature and at an appropriate distance from vital structures. It appears to have a positive impact on survival. Multicenter randomized trials are necessary to determine the true effect size of RFA and to minimize the impacts of selection and publication biases.

#### **Oxaliplatin plus 5-fluorouracil and folinic acid in gemcitabine-pretreated advanced pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23606201>

- **Journal:** *Journal of Gastrointestinal Cancer*
- **Institution(s):** Mansoura University, Mansoura, Egypt
- **Corresponding author(s):** Hend Ahmed El-Hadaad
- **Major finding:** This regimen (oxaliplatin plus 5-fluorouracil and folinic acid) in patients with gemcitabine-pretreated advanced pancreatic cancer is feasible and active with an acceptable toxicity; however, further investigation in phase III trial is needed.

#### **Serum levels of IL-6 and IL-1 $\beta$ can predict the efficacy of gemcitabine in advanced pancreatic cancer**

<http://www.ncbi.nlm.nih.gov/pubmed/23591198>

- **Journal:** *British Journal of Cancer*
- **Institution(s):** National Cancer Center Hospital East, Kashiwa, Chiba, Japan
- **Corresponding author(s):** Atsushi Ochiai

- **Major finding:** The serum levels of IL-6 and IL-1 $\beta$  predict the efficacy of gemcitabine in patients with advanced pancreatic cancer.

#### **Biliary self-expandable metal stents do not adversely affect pancreaticoduodenectomy**

<http://www.ncbi.nlm.nih.gov/pubmed/23545711>

- **Journal:** *American Journal of Gastroenterology*
- **Institution(s):** Memorial Sloan-Kettering Cancer Center, New York, NY
- **Corresponding author(s):** Mark Schattner
- **Major finding:** Placement of self-expandable metal stents (SEMS) is not contraindicated in patients with resectable pancreatic cancer who require preoperative biliary drainage.

#### **A multi-institutional, phase II study of ganitumab in advanced pancreatic neuroendocrine tumors**

<http://www.ncbi.nlm.nih.gov/pubmed/23572164>

- **Journal:** *Endocrine-Related Cancer*
- **Institution(s):** Moffitt Cancer Center, Tampa, FL and others
- **Corresponding author(s):** Jonathan Strosberg
- **Major finding:** While well-tolerated, single-agent ganitumab (a human monoclonal antibody against IGF1-R) was not found to result in major tumor responses among patients with metastatic well-differentiated carcinoid or pancreatic neuroendocrine tumors.

#### **Targeted therapies in neuroendocrine tumors (NET): Clinical trial challenges and lessons learned**

<http://www.ncbi.nlm.nih.gov/pubmed/23615698>

- **Journal:** *The Oncologist*
- **Institution(s):** MD Anderson Cancer Center, Houston, TX and others
- **Corresponding author(s):** James Yao
- **Major finding:** Herein, the authors discuss the strengths and weaknesses of the most recent phase II and phase III neuroendocrine tumor studies and discuss how limitations inherent in current trial design can lead to potential pitfalls. They also discuss how trial design can be improved, with the hope of increasing the number of drugs successfully developed to treat patients with neuroendocrine tumors.

#### **Halozyme initiates randomized Phase 2 trial of PEGPH20 in pancreatic cancer**

<http://www.halozyme.com/Investors/News-Releases/News-Release-Details/2013/Halozyme-Initiates-Randomized-Phase-2-Trial-of-PEGPH20-in-Pancreatic-Cancer/default.aspx>

- **Company:** Halozyme Therapeutics, Inc., San Diego, CA
- **Major finding:** Halozyme announced the initiation of a Phase 2 multicenter, randomized clinical trial evaluating PEGPH20, a proprietary, investigational drug, as a first-line therapy for patients with stage IV metastatic pancreatic cancer. PEGPH20 is an investigational PEGylated form of rHuPH20, which breaks down hyaluronan in the tumor microenvironment.

### **Novel drug combination showed antitumor activity in patients with incurable BRCA-deficient cancers**

<http://www.aacr.org/home/public--media/aacr-in-the-news.aspx?d=3084>

When given sequentially, two orally available experimental drugs — sapacitabine and seliciclib — worked together to elicit antitumor effects in patients with incurable BRCA-deficient cancers, including pancreatic, according to phase I data presented at the AACR Annual Meeting 2013, held in Washington, D.C., April 6-10. There are no drugs yet approved specifically for this patient population.

### **Electrical pulse treatment pokes holes in hard-to-treat tumors**

[http://www.eurekalert.org/pub\\_releases/2013-04/soir-ept040713.php](http://www.eurekalert.org/pub_releases/2013-04/soir-ept040713.php)

A new, minimally invasive treatment that tears microscopic holes in tumors without harming healthy tissue is a promising treatment for challenging cancers, suggests a preliminary study presented at the Society of Interventional Radiology's 38th Annual Scientific Meeting in New Orleans. The method is described as especially beneficial in treating liver, lung, pancreatic and other cancers that are close to blood vessels, nerves and other sensitive structures.

### **Cancer researchers revisit 'failed' clinical trials**

<http://www.nature.com/news/cancer-researchers-revisit-failed-clinical-trials-1.12835>

This *Nature* article discusses how the NCI is recruiting stories, tissue samples and clinical data from up to 200 'exceptional responders' to learn why these patients benefited from drugs that failed most others. The article uses a pancreatic cancer patient as an example of a compelling 'n-of-one' example.

### **National survey on the effect of oncology drug shortages on cancer care**

<http://www.ncbi.nlm.nih.gov/pubmed/23515514>

- Journal: *American Journal of Health-System Pharmacy*
- Institution(s): Ohio State University, Columbus, OH and others
- Corresponding author(s): Ali McBride
- Major finding: A survey of U.S. oncology pharmacists indicated that oncology drug shortages occurred frequently in the first half of 2011. Shortages led to delays in chemotherapy and changes in therapy, complicated the conduct of clinical research, increased the risks of medication errors and adverse outcomes, and increased medication costs.

## **CANCER CONTROL, SURVIVORSHIP, AND OUTCOMES RESEARCH**

### **Disparities in pancreas cancer care**

<http://www.ncbi.nlm.nih.gov/pubmed/23579872>

- Journal: *Annals of Surgical Oncology*
- Institution(s): University of Minnesota, Minneapolis, MN
- Corresponding author(s): Elizabeth Habermann
- PanCAN-affiliated author: Selwyn Vickers, MD: Emeritus Scientific Advisory Board
- Major finding: Though Black pancreatic cancer patients appear to present with comparable rates of resectability, they receive care that deviates from current guidelines. Insurance status is associated with inferior profiles of resectability and treatments. Future policies and research should identify effective strategies to ensure receipt of standard care.

### **Effects of pancreatectomy on nutritional state, pancreatic function and quality of life**

<http://www.ncbi.nlm.nih.gov/pubmed/23616030>

- Journal: *British Journal of Surgery*
- Institution(s): Seoul National University College of Medicine, Seoul, South Korea
- Corresponding author(s): J.-Y. Jang
- Major finding: About half of all patients can expect recovery from pancreatectomy after 6 months, but those with risk factors need more careful follow-up and supportive management.

### **Differences in patients, surgical complexity, and outcomes at NCI-designated Cancer Centers**

<http://www.ncbi.nlm.nih.gov/pubmed/23604012>

- Journal: *Medical Care*
- Institution(s): American College of Surgeons, Chicago, IL and others
- Corresponding author(s): Karl Bilimoria
- Major finding: National Cancer Institute-designated Cancer Centers (NCI-CCs) treated younger, healthier patients, but performed more complex procedures. Comparison of cancer surgery hospital quality is feasible and should adjust for differences in patient demographics, comorbidities, and surgical complexity.