

Summer 2015

healthpoints

In This Issue

1

Vaccines to Prevent Pancreatic Cancer

Columbia researchers making strides

2

Pancreatic Surgery

Excellence in treating complex pancreatic disease

4

Pancreatic Cysts

Surveillance program offers comprehensive monitoring, researches best practices

4

Pancreatitis Clinic

Multidisciplinary clinic provides comprehensive care for patients with pancreatitis

6

Story of Hope

Auto islet transplant surgery gives Tammie Feldman a life free from diabetes

7

In the Know

What every new patient at the Pancreas Center needs to know

healthpoints is published by the Department of Surgery at NewYork-Presbyterian/Columbia University Medical Center as a service to our patients. You may contact the Office of External Affairs for additional information and to request additional copies. Please call: **212.304.7810**

For physician referrals, please call: **1.855.CU.SURGE**
or email: info@columbiasurgery.org

Visit us and sign up for the healthpoints eNewsletter at: columbiasurgery.org

Deborah Schwarz, RPA, CIBE
Executive Director, Office of External Affairs

Jada Fabrizio: Design and Photography
Sherry Knecht: Managing Editor



Message from the Director

I am very pleased that the editors have chosen to devote this issue of Healthpoints to pancreatic disease. The work we do at the Pancreas Center is far more than just a job to us. We are a dynamic interdisciplinary team that balances hard-core science with compassionate care for patients; what we do each day is driven by our passion for helping patients with pancreatic disease.

It is rare for someone to develop a problem with the pancreas that is not complex. That is why the Pancreas Center has made

it standard practice to take a multidisciplinary approach to every patient's case. Every Thursday morning, our entire team — experts from every specialty involved with pancreatic disease — meet in one room to discuss every new patient.

This allows continuous sharing of perspectives and 'cross-fertilization,' so to speak, where findings in the laboratory can be quickly applied to the bedside, and vice versa. Each side informs the other, helping to advance the understanding of pancreatic cancer.

Please learn more about our clinical care and research initiatives at our web site, pancreascenter.com, and please call if there is any way we may be of service.

Yours truly,

John A. Chabot, MD

Executive Director, Pancreas Center

Pancreatic Cancer Vaccines

The Next Frontier

We all like a good story, and as you know, a good story has a beginning, a middle, and an end. Our apologies right up front, because the end of this story is not quite finished.

This is a story about pancreatic cancer. To be more specific, it's a story about the efforts of scientists who are working tirelessly to develop a vaccine to prevent pancreatic cancer. Oh, and you will need to expand your concept of superheroes. In this story, our heroes wear lab coats. They are not afraid to take on the most difficult challenges, and they simply will not give up.

Our villain is pancreatic cancer. Of all types of cancer it is the most deadly, with less than 6% of patients surviving after five years. It is extremely difficult to diagnose it early, when it would be easier to treat. And, not only is it often diagnosed too late for it to be removed by surgery, but it is highly resistant to chemotherapy. So far, the villain is in the lead.

Pancreatic Cancer Vaccine ~ Continued on page 2

More from the Department of Surgery experts at:



www.facebook.com/columbiasurgery



www.twitter.com/columbiasurgery



www.columbiasurgery.org

The Beginning

Not so very long ago, scientists began discovering ways to successfully fight certain kinds of cancer. They already knew that vaccines could stimulate the immune system to fight infectious entities, and they were able to create vaccines against certain viruses, such as human papilloma virus (HPV), that play a role in stimulating the growth of cancer. **Yvonne Saenger, MD**, Assistant Professor of Medicine at Columbia University Medical Center and a pioneer in the field of immunotherapy, explains that the HPV vaccine prevents HPV from infecting the cells in the cervix. By educating the immune system to act against that specific pathogen, the vaccine prevents the virus from taking hold and progressing to cancer.

Unfortunately, not all cancers have infectious causes that can be identified and targeted this way, and treating a full-fledged cancer is far more difficult than preventing it. One reason is that many types of cancer cells are similar enough to normal cells that the immune system cannot distinguish between them very well. Another is that cancer has the ability to suppress the immune system, effectively shutting off its normal processes. As a result, scientists found that despite their very best efforts, they were not able to develop vaccines that worked well against many types of cancer.

However, our heroes didn't give up, and beginning in about 2005, they found success through a different approach. Rather than trying to prevent the cancer by attacking the cancer cells directly, scientists working on melanoma found they could reactivate components of the immune system, bolstering them to fight off the cancer. The approach, called tumor immunotherapy, showed dramatic success in reducing the toll of melanoma. In just ten years, long-term

survival for patients with metastatic melanoma has risen from 5% to over 50%.

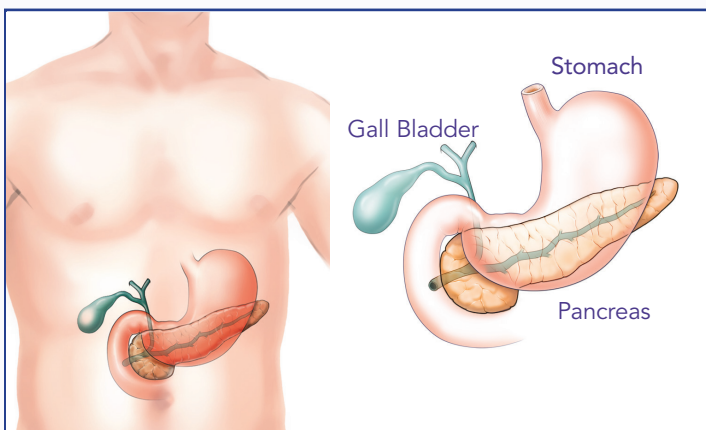
The Middle

Armed with encouraging results in melanoma, Dr. Saenger and colleagues at NYP/Columbia are now working to apply those successes to pancreatic cancer. If you suspected there might be more challenge or conflict, you were right; pancreatic cancer is more difficult to treat than many others, for several reasons. One is that the immune system's response against pancreatic cancer is not very strong – there are simply fewer T cells present in pancreatic tumors, so “there is less to work with” in trying to stimulate an immune response, says Dr. Saenger. Second, pancreatic tumor cells are highly skilled at subterfuge. They protect themselves against the immune system by creating a shell of fibrous material. Third, pancreatic cancer cells have a particular talent for attracting special cells that dampen the immune response.

This is where the story becomes interesting. The general consensus among experts currently studying pancreatic cancer is that immunotherapy will eventually work. “We may need to bring the vaccine concept back in and induce immunity,” says Dr. Saenger. She and other scientists are testing several approaches at this time, including vaccines based on bacteria that could eventually be combined with immune stimulators. As she explains, “The strongest types of vaccines are pathogen-based. The immune system is designed to protect us against infectious stimuli, so vaccines using bacteria as delivery systems may be best.”

One approach under study at NYP/Columbia uses listeria bacteria combined with mesothelin, a protein that is found in excess amounts in certain cancers including pancreatic cancer. The listeria stimulates an inflammatory response, although it has been attenuated (genetically modified) so that it cannot spread from cell to cell and make patients too sick. The listeria-mesothelin combination is administered intravenously, and the hope is that the combination will penetrate into the inside of the tumor cells, where the intracellular bacteria will induce a strong immune reaction.

A study of this agent, initiated several years ago with **Dr. Robert Fine** and now directed by **Dr. Paul Oberstein** in the Division of Hematology & Oncology, is comparing listeria alone, listeria plus GVAX, and chemotherapy, to determine whether they are safe and whether they work better than chemotherapy in treating patients with advanced pancreatic cancer. For those wanting the details, the GVAX pancreas vaccine contains GM-CSF, or granulocyte-macrophage colony-stimulating factor-secreting allogeneic pancreatic tumor cells, and is designed to induce immunity to



The pancreas has essential functions in both the digestive and endocrine systems, helping in digestion and in regulation of blood sugar.

cancer antigens including mesothelin. It is administered with chemotherapy drug cyclophosphamide.

So far the team has found that patients treated with listeria combined with GVAX fared better than those who received GVAX alone; these early results were published in the *Journal of Clinical Oncology* in January, 2015. Additional trials opening soon will expand this line of inquiry.

In addition to investigations in immune therapy, Dr. Saenger is also tackling pancreatic cancer from another important angle, the identification of biomarkers. The goal is to identify a genetic signature that can be used to predict which patients will respond to which kinds of therapies. This approach was advanced in patients with melanoma first, and work is now underway in pancreatic cancer as well, in collaboration with **Dr. Kenneth Olive**. “Some pancreatic patients have more immune response than others. Finding them is important so that we can give patients better targeted therapies,” says Dr. Saenger.

Another approach under investigation is called ‘micro-satellite instability testing.’ This entails identification of patients with pancreatic cancer who have a greater number of genetic mutations due to deficiencies in DNA repair. Because their tumors are better differentiated from the native immune system, they may respond better to immunotherapies. Dr. Saenger is also planning to open a trial of oncolytic viral therapy combined with checkpoint blockade, which harnesses the power of a virus that is engineered to attack cancer by activating the T cells.

How this story ends remains a question, but Dr. Saenger is optimistic that it will, in time, have a happy ending. Stay tuned. ■

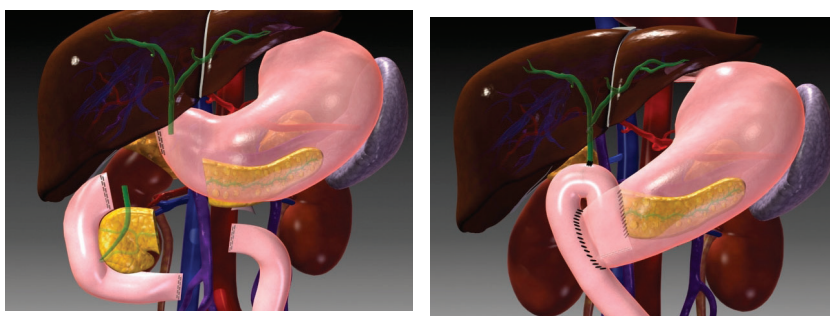
More about pancreatic cancer research is available at:
columbiasurgery.org/healthcare-professionals/pancreatic-cancer

Pancreatic Surgery

Meeting the Challenge, Raising the Bar

Located at the crossroads of the digestive system, the pancreas is a complex organ with multiple functions. It is intimately attached to the first portion of the intestine and overlies the major blood vessels that bring blood to and from all the abdominal organs. Because of this critical location and its vital role in the digestive and endocrine systems, surgery for pancreatic disease a highly complex undertaking.

Dr. Allen Whipple is credited with refining the pancreaticoduodenectomy – the operation that commonly bears his name – while practicing at Columbia–Presbyterian Medical Center between 1910 and 1946. Thus the Pancreas Center stands upon a long history of surgical innovation in the care of pancreatic disease.



The Whipple procedure is the most common pancreatic cancer operation. A portion of the pancreas is removed, together with the lower portion of the stomach, the duodenum the gallbladder, and part of the common bile duct. The remaining bile duct and pancreas are attached to the small intestine.

Now under the leadership of **Dr. John Chabot**, the Pancreas Center is a multidisciplinary program with experts from all specialties necessary to optimally care for patients with pancreatic disease. Studies clearly show that patients undergoing surgery at high-volume hospitals do better than those treated at centers performing fewer pancreatic operations.

For patients with pancreatic tumors, surgical removal offers the only possibility of cure. Getting more people safely to the operating room and recovered from surgery without significant complications offers the best chance of improving survival and quality of life.

Our surgeons currently perform the Whipple procedure and other pancreatic operations with among the lowest complication rates in the nation. We routinely use chemotherapy and radiation to convert patients who were originally ineligible for surgery into operative candidates. If a tumor involves the blood vessels, we are able to reconstruct the vessels in order to remove locally advanced cancers. Minimally invasive surgical techniques including laparoscopy and robotics are used to provide excellent cancer outcomes while improving patient comfort and recovery. Other innovations, such as irreversible electroporation, commonly known as NanoKnife, treat tumors when standard operations may not be feasible. ■

Learn more about the anatomy and functions of the pancreas, and surgery for pancreatic disease, at pancreascenter.com.

Pancreatic Cysts

The Cyst Surveillance Program provides cutting edge services for patients with pancreatic cysts while conducting research to define best practices.

Several types of pancreatic cysts, or fluid-filled pockets, can develop on or within the pancreas. Relatively common, they are often detected incidentally during CT scans or MRI testing for other problems. Most pancreatic cysts will not become cancerous, but a small fraction of them will, and they may also cause abdominal pain or pancreatitis. For this reason, it is important to monitor pancreatic cysts with great care and to remove those that are at risk for becoming malignant.

It is not possible to determine from imaging alone which cysts are benign and which are malignant. This distinction requires more invasive testing such as endoscopic ultrasonography and fine-needle aspiration (EUS/FNA). Particularly when the cyst is not causing any symptoms, the onus is therefore on the diagnostician to identify which cysts have high-risk features and are likely to progress to cancer, and to make judgment calls about which patients should undergo more invasive testing or surgery, and which can be left to ongoing surveillance.

The Pancreas Center at NewYork-Presbyterian/Columbia University Medical Center established a dedicated cyst surveillance program in 2012 to provide comprehensive, long-term monitoring of patients with suspected or known pancreatic cysts. The program includes every multidisciplinary specialty needed to treat pancreatic cysts, such as dedicated radiologists, gastroenterologists and surgeons. The goal of this center is twofold: a) provide a comprehensive and systematic approach to surveillance of patients with pancreatic cysts, and b) enhance our understanding of how these cysts evolve over time by maintaining databases and conducting research based on this data.

Using new technologies to monitor patients, the clinic's approach is highly methodical and more cautious than some others in the country. According to **Tamas Gonda, MD**, a therapeutic endoscopist and gastroenterologist with the program, a highly proactive approach makes sense based on data the center has been collecting and analyzing for the last decade. This data, which includes information about approximately 800 patients with pancreatic cysts, has provided crucial evidence that has shaped the center's approach to care.

When to Treat? Benefit vs. Risk

In every area of medicine, doctors must weigh the benefits of a particular test or treatment against its costs, which may include not only dollars but also physical or emotional trauma to the patient, recovery time, and other factors. In the case of pancreatic cysts, experts at the pancreatitis clinic must consider whether the risk of cancer is sufficient to justify the cost, inconvenience, and possible effects of surveillance or treatment. The \$64,000 question: when should cysts be monitored or treated, and when should they be left alone?

Nationally, experts have not yet reached consensus regarding how aggressively physicians should monitor and treat asymptomatic pancreatic cysts. Until recently, the standard guidelines included two sets of recommendations, one from the American College of Radiology and the other from the American Pancreas Association. In general, these call for indefinite surveillance of intraductal papillary mucinous neoplasm (IPMN) or any cyst that shows even one feature indicative of a high-risk lesion. In a move that was surprising to some experts, the American Gastroenterological Association

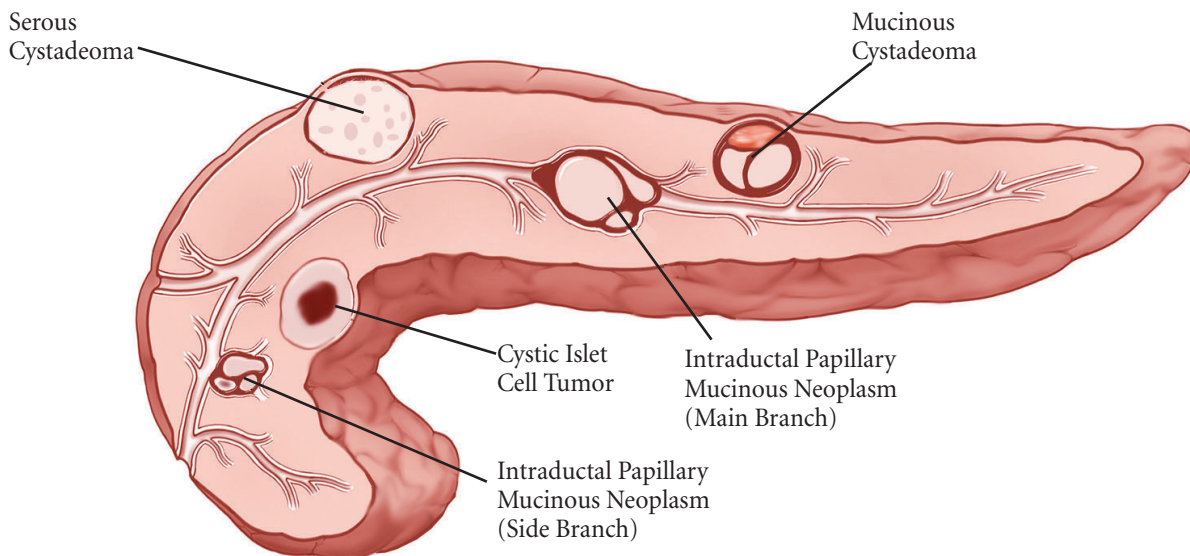
Pancreatitis

Multidisciplinary clinic

The Pancreas Center is pleased to announce that it has established a dedicated pancreatitis clinic for the care of patients with acute and chronic pancreatitis. Serving the complex needs of patients with pancreatitis, this outpatient program includes all clinical specialties needed to diagnose and treat this condition, including gastroenterologists, surgeons, interventionalists, a nutritionist, experts in pain management, and more.

Beth Schroepe, MD, PhD, an accomplished surgeon, researcher, and author on pancreatic disease, co-directs the pancreatitis clinic with **John Poneris, MD**, who specializes

in the medical management of pancreatic disease. Their vision is to provide the highest quality care possible for patients who face this difficult-to-treat condition. "We have established a streamlined process so that if a patient needs an MRI or other imaging, we do the imaging in the morning, and then meet with the patient later in the day to determine the treatment plan. Avoiding the need for a second visit makes it easier on patients," she says. Many patients with pancreatitis need interventional procedures to place a stent or drain fluid, and specialists are available at all times. Other experts at the clinic focus



Pancreatic Cysts ~ Continued from page 2

(AGA) released yet another new, somewhat controversial set of guidelines in April, 2015. This edict calls for greater intervals of time between surveillance, and for clinicians to end surveillance at five years if a patient's cyst does not demonstrate enough high-risk features (just one high risk feature is not enough to warrant continued surveillance in this system).

According to Dr. Gonda, the new AGA guidelines attempt to answer criticism that some centers are overly aggressive in treating and monitoring pancreatic cysts. The authors of the guidelines cite the need to balance the risks associated with treatment against uncertain benefits, because it remains unknown how frequently pancreatic cysts progress to cancer, making conclusive quantitative analysis of risk vs. benefit challenging.

In light of the center's experience, the Pancreas Center will continue to offer the same thorough long-term surveillance and treatment, and will continue to monitor cysts with even one high-risk feature. As Dr. Gonda explains, the current sets of guidelines are useful in informing physicians, but are not definitive or conclusive. "We are doing our own research based on our data registry to understand how pancreatic disease evolves over time, to identify which patients are most likely to progress, and to identify who faces the highest risk for developing precancerous lesions. Through this process we hope to provide the least invasive but most accurate guidance to our patients, and minimize the anxiety associated with the possibility of developing pancreatic malignancy." ■

Learn more about pancreatic cysts at pancreascenter.com

offers pancreatitis expertise and streamlined patient care.

on pain management and digestive issues, as these are common needs.

Pancreatitis can be debilitating enough that it makes normal life impossible, and nuanced care is needed by physicians who can offer expertise in all aspects of care. Patients commonly report feeling hopeless and defeated when their local physicians or hospitals aren't able to help, or worse yet, if they are accused of just seeking drugs. As one patient at the pancreatitis clinic said, "I am so glad this clinic is here. Someone finally understands I'm not just looking for drugs." ■

What is Pancreatitis?

Pancreatitis is chronic or acute inflammation of the pancreas, which can be extremely painful and debilitating. Although long-term alcohol abuse causes more than half of cases, pancreatitis can also be caused by gallstones, structural problems with the pancreatic and bile ducts, severe viral or bacterial infection, elevated levels of calcium or triglycerides in the blood, autoimmune disease, mutations of the cystic fibrosis gene, and numerous other factors.

Story of Hope: Tammie Feldman

Auto islet transplantation offers hope for patients with chronic pancreatitis.

For seven years, Tammie Feldman lived a life she described as “a tortured cycle” in and out of the hospital, in constant, intolerable pain. “Pancreatitis changes every aspect of your life and the lives of those you love. It is a horrible and depressing existence and I can tell you it completely changes your world. You spend every moment in the fetal position praying for your pain to end,” says Tammie, mother of two from Long Island.

She traveled far and wide in search of help, to no avail – until she met **Dr. Beth Schrope** at the Pancreas Center.

Dr. Schrope was able to offer an option that no other center could: pancreatectomy with auto islet transplantation. The procedure combines two parts: pancreatectomy, or removal of the pancreas, to end the pain caused by pancreatitis, plus autologous islet cell transplantation to prevent diabetes.

Pancreatectomy entails removal of the pancreas, spleen, the duodenum, part of the stomach, and redirection of the digestive system. This relieves the pain in 90% of patients with pancreatitis, but leaves them without the ability to produce insulin, causing a difficult-to-treat form of Type 1 diabetes known as “brittle diabetes.” Islet transplant surgery attempts to prevent diabetes by reintroducing the patient’s own islet cells so they will, with luck, continue to produce insulin.

As Dr. Schrope explains, “Islet cells in the pancreas produce insulin. When the pancreas is removed, patients become se-

verely diabetic. Through years of research, we have developed an effective procedure to extract the islet cells from the pancreas, process them in the laboratory, and reinfuse them into the liver. Once in the liver, they may resume functioning and produce insulin, potentially sparing the patient from that severe form of diabetes.”

Studies show that about one third of patients require no insulin therapy after autologous islet transplantation, another third require some insulin therapy after the procedure, and the procedure is unsuccessful in preventing diabetes in the remaining third. “Returning to normal activities and living without pain is a tremendous improvement in patients’ quality of life. Now with islet transplantation, there’s an added bonus—the possible prevention of diabetes,” says Dr. Schrope.

In Tammie’s case, the procedure worked very well. Not only did the surgery relieve her excruciating pain, but the islet cells began functioning as hoped, and she is now completely free of insulin supplements.

With tremendous gratitude to Dr. Schrope and her team, Tammie says, “I am pain free, diabetes free, and loving my new body! I am finally enjoying my family and loving being at home. I will forever be grateful for the gift you gave to me and my family.” ■

To learn more about auto-islet transplantation, please call 212.305.9467.



Tammie Feldman at far right, with her husband and daughters.

First Visit: What New Patients Need to Know

Your patient coordinator has your back.

Shenelle Wilson, the new patient coordinator for the Pancreas Center, is here to help you beginning with your first call to the center. Shenelle obtains all the required paperwork and health records from other providers within and outside of the hospital, and she schedules any testing that may be needed to help the physicians at the Pancreas Center determine a diagnosis or plan of care.

The center is dedicated to providing appointments quickly – usually within a few days of a patient's request for an appointment. The team reviews new patients' records within 24 hours of their arrival at the center so there is no lag time between requesting an appointment and seeing the doctor.

Reach Shenelle at 212.305.9467

You will be enrolled in the Pancreas Center's database.

All patients with pancreatic disease are enrolled in the center's research database. This database tracks every patient's health condition over time, and includes information about each patient's diagnosis, course of disease, imaging and laboratory results, information about family history, other health conditions, and other data. All information stored in the database is kept strictly confidential and is used for one purpose: research.

This wealth of data allows researchers at the Pancreas Center to conduct studies that will increase their understanding of the development of pancreatic cancer, factors affecting the success of treatment, and more. Examples of current studies based on the database include:

- ◆ A study to determine the incidence of family history of pancreatic cancer and other malignancies among patients who have IPMN
- ◆ A study examining the association of pancreatic cancer (adenocarcinoma) with epigenetics and modifiable factors (e.g., diet, lifestyle)
- ◆ A study to determine the frequency of the various forms of local invasion by pancreatic cancer (adenocarcinoma)
- ◆ A study to determine the frequency, grade and multifocality of PanIN lesions in the surgical specimens of patients who have undergone resection for pancreatic adenocarcinoma.



**PANCREATIC CANCER
AWARENESS**

Ask your doctor to invite you to myColumbiaDoctors, your online health portal.

MyColumbiaDoctors is a new online patient portal that provides a free, secure way for patients to access health records, request an appointment or prescription renewal, ask a question, and pay your bill. Of course, patients may always call and speak with someone at the center. But if you want to send a message outside of our normal office hours or make a request that can be handled quickly online, myColumbiaDoctors is a great option.

Patients may make requests 24/7 from the comfort of home, or from anywhere using the *FollowMyHealth* mobile app on a mobile device.

All patients should receive an invitation to register for **myColumbiaDoctors** from your doctor's office. Please register directly from this invitation.

Please note:

MyColumbiaDoctors provides access to certain types of information such as medications and test results, but does not include complete medical records. If you need a full copy of your medical record, please contact the Pancreas Center.

The Pancreatic Cancer Support group is open patients, family, and caregivers.

Pancreatic cancer has far-reaching effects across patients' entire lives, affecting virtually every aspect of daily life, both their own lives and that of their families. Patients often need support and information about depression and anxiety, financial difficulties that may result from inability to work, impact on family relationships, and many other concerns. The Pancreatic Cancer Support Group addresses these needs and more in their monthly meetings. ■

Date: Third Tuesday of each month

Time: 4 – 5 pm

Location: Herbert Irving Pavilion
5th Floor Conference Room
161 Fort Washington Avenue
New York, NY 10032

For information, contact Geri Lipschitz at 212.305.2527 or lipschi@nyp.org

Annual Pancreatic Cancer Awareness Day

Saturday, November 7, 2015 • 1:00 to 3:00pm

Vivian and Seymour Milstein Family Heart Center
Myrna L. Daniels Auditorium, 173 Fort Washington Avenue, NYC

Every November, the Pancreas Center hosts its annual Pancreatic Cancer Awareness day, where clinicians present on the latest advances in pancreatic care and survivors share their experiences. A health fair and refreshments will follow.

For information and reservations please contact: Christine Rein

Tel: 212.304.7814 • E-mail: cmr2146@cumc.columbia.edu

Register online: www.columbiasurgery.org/events



Gigi Shaw Arledge Conference on Pancreatic Disease

Monday, October 5, 2015 • 9:00 to 5:00pm

Vivian and Seymour Milstein Family Heart Center
Myrna L. Daniels Auditorium, 173 Fort Washington Avenue, NYC

During this one-day annual conference for clinicians, physicians and researchers present the latest information on basic, translational, clinical and epidemiological research.

Registration and information: Call 212.304.7817 or e-mail: jas2134@cumc.columbia.edu

Ruth Leff Siegel Award for Excellence in Pancreatic Cancer Research

The third annual **Ruth Leff Siegel Award for Excellence in Pancreatic Cancer Research** was awarded July 15, 2015 by the Pancreas Center at Columbia University and The Herbert Irving Comprehensive Cancer Center. This annual \$50,000 award goes to an investigator who has made the most impactful contribution to the understanding and/or treatment of pancreatic cancer over the past year.

The external \$50,000 award went to **Dr. Steven Leach** of Memorial Sloan Kettering Cancer Center, whose animal studies have led to important new understandings of the mechanisms by which pancreatic cancer develops. This investigation has identified a new therapeutic

target for chemoprevention and treatment of pancreatic cancer. His seminal paper was titled *Oncogenic Kras activates a hematopoietic-to-epithelial IL-17 signaling axis in preinvasive pancreatic neoplasia*.

The internal \$25,000 award went to **Dr. Kenneth Olive** of the Herbert Irving Comprehensive Cancer Center, for his findings on pancreatic stroma (the structure of pancreatic tumor cells). His paper, *Stromal Elements Act to Restrain, Rather Than Support, Pancreatic Ductal Adenocarcinoma*, explains why the use of stromal targeting therapies may produce paradoxical effects in patients, and it explained the recent failures in human trials of smoothened inhibitors.

Still can't find what you are looking for?

With almost 8000 pages on our web site, we probably have it covered. Use the search bar located on the top of every page at



or email us at info@columbiasurgery.org