

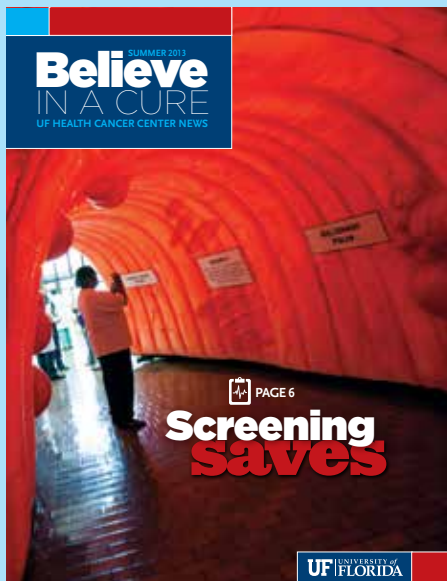
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About us



Believe in a Cure is the newsletter for the UF Health Cancer Center, home to cancer care and research for the Southeast's most comprehensive academic health center. In each issue, we will bring you stories about the progress and patient-centered care occurring at the center, as well as the partners who help make it happen.

Are you a patient?

For more information about care and services offered at the UF Health Cancer Center, call 352-272-8010.

To support the work of the UF Health Cancer Center, call the UF Health Cancer Center Development Office at 352-273-8689, write to P.O. Box 103633, Gainesville, FL 32610, or visit "Make a Gift" at www.cancer.ufl.edu.

To receive or opt out of receiving this newsletter, email Lindy Brounley at brounley@ufl.edu.

ON THE COVER

A giant inflatable colon, courtesy of the Colon Cancer Alliance, gives a visitor to UF Health Shands Hospital the insider's view of healthy, diseased and cancerous colon.

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From the director's desk

In May, leaders of our health system announced an exciting change. Our health system is no longer known as UF&Shands. We are now University of Florida Health, a new umbrella term that more accurately reflects the health system's breadth of services and strong ties to the expertise housed within UF. As a result, we have a new name, too. We're proud to announce that our center is now the UF Health Cancer Center.

So what does all this mean and how does it benefit our patients who entrust us with their care and the future patients we hope to help through our many research endeavors?

First of all, having a name more recognized and tied to the stellar reputation of the University of Florida helps boost the recognition of the entire health system. National name recognition helps us not only retain and recruit talented faculty members and researchers, it also helps boost our reputation with patients and the agencies that fund our research. The end result is better health care and better research — a win-win for all, but especially for our patients.

Improving the lives of our patients is also the goal of this issue of Believe in a



PHOTO BY SARAH KEWEL

PAUL OKUNIEFF

Paul Okunieff, M.D., is the Marshall E. Rinker Sr. Foundation and David B. and Leighan R. Rinker chair and serves as director of the UF Health Cancer Center and chair of the College of Medicine department of radiation oncology.

Cure. On the following pages, we have turned our focus to screening and prevention for four of the most common types of cancer — colorectal cancer, breast cancer, prostate cancer and cervical cancer. We will introduce you to a patient whose life was saved by a colonoscopy and provide you with the latest information and tips on screening.

At the UF Health Cancer Center, we are devoted to finding better treatments and cures for cancer. But most importantly, we are committed to helping prevent cancer in the first place, when possible. We hope the information on the following pages will help our readers do just that.

A handwritten signature in black ink that reads "Paul Okunieff".

Paul Okunieff, M.D.
Director, UF Health Cancer Center

Chugging THROUGH CANCER

New UF-developed DNA nanotrain steams through cancer cells

UF researchers have developed a “DNA nanotrain” that fast-tracks its payload of cancer-fighting drugs and bioimaging agents to tumor cells deep within the body. The nanotrain’s ability to cost-effectively deliver high doses of drugs to precisely target cancers and other medical maladies without leaving behind toxic nano-clutter has been the elusive Holy Grail for scientists studying the teeny-tiny world of DNA nanotechnology.

DNA nanotechnology holds great promise as a new way to deliver chemotherapy directly to cancer cells, but until now, scientists have not been able to direct nanotherapies to consistently differentiate cancer cells from healthy ones. Other limiting factors include high costs, too-small amounts of drugs delivered and potential toxic side effects.

“Most nanotechnology relies on a nanoparticle approach, and the particles are made of inorganic materials; after they’ve been used as a carrier for the drug, they’ll be left inside the body,” said the study’s lead investigator, Weihong Tan, Ph.D., a UF distinguished professor of chemistry, a professor of physiology and functional genomics, and a member of the UF Health Cancer Center and the UF Genetics Institute. “Compared to existing nanostructures, our nanotrain is easier and cheaper to make, is highly specific to cancer cells, has a lot of drug-loading power and is very much biocompatible.”

Described in the Proceedings of the National Academy of Sciences, Tan’s DNA nanotrain is a three-dimensional

structure composed of short strands of DNA tethered together into one long train. On the end of the nanotrain is an aptamer, a tiny piece of nucleic acid serving as the train’s “locomotive” on biochemical autopilot to home in on and bind to specific cancer cells. Trailing behind are tethered DNA structures that serve as side-by-side, high-capacity “box cars,” transporting bioimaging agents or drug cargos to their targets.

“The beauty of the nanotrain is that by using different disease biomarkers you can hitch different types of DNA probes as the train’s ‘locomotive’ to recognize and target different types of cancers.” — Weihong Tan, Ph.D.

“We’ve precisely targeted leukemia, lung and liver cancer cells, and because the DNA probes are so precise in targeting only specific types of cancer cells we’ve seen dramatic reduction in drug toxicity in comparison to standard chemotherapies, which don’t discriminate well between cancerous and healthy cells,” Tan said. — [Lindy Brounley](#)

Celebrating EXCELLENCE

The UF Health Cancer Center recently honored the outstanding work of clinicians and researchers during the second UF Health Cancer Center Celebration of Excellence Awards ceremony. Those honored were nominated by cancer center members and represent the best qualities of the award categories for which they were being honored.



Recognition

UF Health Cancer Center associate directors Jon Graham (left) and John Wingard (right) present Frederic Kaye with the Bench to Bedside award.

MVP Award

Thomas George, M.D., was recognized with the MVP Award. UF Health faculty and staff members from cancer research, clinical and administrative areas are eligible for the MVP Award, which seeks to acknowledge personal and professional excellence that has made a significant positive impact. Dr. George has done just that. He is described as being “hardworking,” “passionate,” “an excellent oncologist, wonderful person and patient advocate,” and one of the “nicest guys around.” Another wrote, “He fights for his patients... and any patient ... to get them the most excellent care our center is able to provide in a quick, consistent and coordinated manner.”

The Top Team Effort Award

Daniel Indelicato, M.D., and his team at the UF Proton Therapy Institute in Jacksonville received the Top Team Effort Award. As one nominator wrote, “families are often displaced from familiar surroundings for six to eight weeks during the most stressful time of their lives. The team meets before the patient arrives to coordinate care and cover every aspect of anticipated need for each child and family.” Team members include Indelicato, Nancy Mendenhall, M.D., Julie Bradley, M.D., Ronny Rotondo, M.D., Amy Sapp, Annie Rini, Erinn Parvin, Gina Newton, Kendra Alipio, Adrienne Mansen, Heather Oakley, Kim Ely and Mitch Kubacki.

Bench to Bedside Award

Frederic Kaye, M.D., the co-director of the thoracic oncology program, was honored for his work as a physician-scientist. His work focuses on the transition of scientific discoveries into new cancer therapies. In his research, he has found a striking correlation with the ability of two COX-2 inhibitors to block lung tumor growth in cell lines with mutant LKB1/CRTC activated status but not LKB1 wild type samples. This finding offers the opportunity to open a new field of diagnostics and therapeutics for cancer treatment and provide a rational strategy for the use of a large family of commercially available COX-2 inhibitors as an effective therapy for lung cancer patients.

The Golden Glove Award

Andrea Penley, R.N., a nurse navigator in the thoracic oncology program, was honored for her unwavering and consistent commitment to cancer patients. One nominator described her as “the embodiment of excellence.” Another colleague said she “is amazing in so many ways. She is invaluable to us, the physicians, in coordinating the care of our lung cancer patients. But more importantly, she is invaluable to our patients.”

Mentoring Outside the Box Award

Dietmar Siemann, Ph.D., was the recipient of the 2013 Mentoring Outside the Box Award. Nominees eligible for the Mentoring Outside the Box Award are UF Health cancer research or clinical faculty members who have provided extraordinary leadership and mentoring to students, postdoctoral fellows and/or junior colleagues. A nominator said, “Overall, he is an ideal mentor that really cares and perseveres towards the progress and development of his students into proficient scientists geared to conquer in the war against cancer.”

The best test you'll ever take



How screening techniques for cancer save lives and offer hope

It was the suspicious blood test that first concerned Michelle Wright's doctors. They suspected cancer might be causing the abnormal results — they just didn't know where it was or which type of cancer it might be.

In addition to hearing the "C" word, Michelle and her husband, David, faced the added stress of how to pay for all the tests she would need to find or rule out cancer. David is self-employed and at the time, the couple lacked health insurance.

Through the Screen for Life program, Michelle was able to sign up for a free colonoscopy at the UF Health Cancer Center. It was the one test the couple weren't particularly concerned about.

So they were shocked when the colonoscopy revealed a large tumor growing inside her colon.

"Colon cancer is the one thing we did not expect," David says. "Michelle is the healthiest woman I have ever known."

Michelle added, "Nobody in my family has ever had anything like that."

Michelle was diagnosed with type 3A colon cancer in June 2012 and underwent surgery and chemotherapy to treat the disease. One year later, she's feeling almost back to normal.

The colonoscopy saved her life, and now Michelle urges friends and loved ones to get the test because not only can it catch cancer, it can actually help prevent it from developing in the first place.

As people age, polyps can develop in the lining of the colon. If not removed, these polyps can, over time, turn cancerous. Ideally, the goal of a colonoscopy is to find these polyps before they become cancer. If found during the procedure, the polyps are immediately removed, thus preventing the disease from developing, says Thomas George, M.D.

"Colorectal cancer isn't something we normally talk about at the dinner table, but it's the second or third leading cause of cancer deaths depending on what statistics you look at it," George says. "If all we did is make sure people got screened, we would almost eliminate colon cancer, not only in people here but in citizens across the country."

Sponsored by the Centers for Disease Control and Prevention and the Florida Department of Health and in partnership with the UF Health Cancer Center, the Moffitt Cancer Center and the Sylvester Comprehensive Cancer Center in Miami, Screen for Life provides free or low-cost colonoscopies to uninsured and underinsured Floridians and also works to educate the public about colon cancer and the importance of screening.

After watching his wife battle colon cancer, David signed up to get his own colonoscopy through Screen for Life. He went in for the screening in June.

"I hope more people take advantage of Screen for Life," Michelle says. "Don't wait like me."

Adds David, "We know firsthand what can happen if you don't get screened early. Nobody wants to go through this." — April Frawley Birdwell



FOR MORE INFORMATION ABOUT SCREEN FOR LIFE, CALL 352-334-7945
OR VISIT WWW.DOH.STATE.FL.US/FAMILY/CANCER/CRC/SCREENING.HTML

Screening saves. On the following pages we have a cancer-by-cancer breakdown of screening recommendations. >>

Breast cancer

"Mammography has clearly led to a decrease in breast cancer deaths."

— Karen Daily, D.O.

Signs and symptoms: Breast cancer is typically detected when patients or their physicians detect a lump either during a breast exam or a mammogram.

Who is at high risk?: People who have a mother, sister or aunt who has had breast cancer are at high risk, as are those who have a mutation of the BRCA gene.

Screening techniques: When it comes to the breast, the gold standard for detecting cancer is the digital mammogram, says Karen Daily, D.O., a physician with the UF Health Breast Center. Other techniques, such as MRI, are used in addition to the digital mammogram to help detect cancer in women who are at high-risk for the disease. Within the UF Health Breast Center, mammograms are reviewed by breast radiologists.

Recommendations: First, know your family history, Daily says. Know whether you have any first-degree relatives (sisters, your mother or aunts) who have had breast cancer, and most importantly, find out how old they were when they were diagnosed. The younger your relative was when she was diagnosed is a stronger risk factor for you. Screening recommendations vary for women under 50 so talk to your doctor. Your risk factors affect how often screening will be required for you. The American Cancer Society recommends annual screening beginning at age 40.

Controversy: Until 2009, recommendations called for women to get routine mammograms beginning at age 40. But that year the U.S. Preventive Services Task Force changed its recommendation for routine mammograms to begin at age 50, drawing outcry from some physicians and advocacy groups. Research on the necessity of routine mammograms before age 50 has been mixed, so experts say it's a decision you should discuss with your own doctor in light of your own risks.

Prostate cancer

"We in the urologic community believe that the PSA test and prostate cancer screening are still very important."

— Li-Ming Su, M.D.

Signs and symptoms: The vast majority of prostate cancer cases are detected with a blood test called prostate-specific antigen, or PSA, with most patients having no symptoms.

Screening techniques: Prostate cancer screening is based on the performance of two tests: a digital prostate examination in conjunction with a PSA blood test.

Health disparities: African-American men are more likely to get and die from prostate cancer than their white counterparts. The disease tends to be more aggressive in black men, which is why screening is recommended for them at a younger age, says Folakemi Odedina, Ph.D., a UF Health Cancer Center health disparities researcher.

Controversy: Currently, opinions are mixed on the PSA test. A U.S. study and a similar European PSA study were published in 2009 with contradictory results, raising the question as to whether the PSA test helps save lives. Because of this, in 2011, the U.S. Preventive Services Task Force began discouraging use of routine PSA testing, saying it may lead to overdiagnosis and overtreatment. Urologists counter this, saying the PSA saves lives. Further analysis of the two 2009 studies indicated that for younger and healthier men specifically, there was a 44 percent reduction in prostate cancer deaths in those who received annual PSA screening as compared to a similar group of men where PSA was not used. As a compromise, the American Urologic Association amended its guidelines, still advocating the test be given, just less frequently, based on patients' age and risk factors.

Recommendations and treatment: For men ages 55 to 69, screening is recommended every year or every other year. Men with risk factors such as family history or who are African-American should discuss the risks and benefits of earlier screening with their physicians. Typically, early-diagnosed prostate cancer is very treatable by either surgery or radiation. Select patients who are at low risk of developing metastasis from their disease may undergo active surveillance to monitor the cancer and treat only when substantial growth is noted, says Li-Ming Su, M.D., a UF urologist. This is in efforts to avoid potential adverse side effects associated with traditional therapies including urinary and erectile dysfunction.

Cervical cancer

“The most important thing is to get your Pap smear done. It may be inconvenient, but a Pap smear can be life-saving.”

— Merry-Jennifer Markham, M.D.

Signs and symptoms: The primary symptom of cervical cancer is vaginal bleeding. Pain and pelvic pressure are also symptoms but typically don't occur until later in the disease. “The hope is that most women don't get to the point where they have symptoms,” said Merry-Jennifer Markham, M.D., medical oncologist and program leader for UF Health's multidisciplinary gynecologic oncology program. “We can prevent invasive cervical cancer the majority of the time if abnormalities are detected early.”

Screening techniques: The screening of choice for cervical cancer is the Pap smear, which a gynecologist performs during a pelvic exam. During a Pap smear, doctors look for precancerous lesions and often test for the human papillomavirus (HPV), the virus that causes cervical cancer.

Recommendations: All women between the ages of 21 to 65 should have a Pap smear every three years, or more often if there is a history of abnormal Pap results in the past.

Prevention: One of the best ways to prevent cervical cancer is to prevent the human papillomavirus, which is the cause of nearly all cases of cervical cancer. Experts recommend boys and girls between the age of 9 and 26 receive the HPV vaccine, which targets the most common cancer-causing strains of the virus, Markham says. In addition, regular Pap smears can detect precancerous lesions and help prevent invasive cervical cancer before it develops.

Treatments: If a woman's Pap smear reveals precancerous lesions, doctors use techniques such as the LEEP procedure (a procedure using a low-voltage electrictrified wire) to remove abnormal tissue. If invasive or more advanced cervical cancer is detected, women may need to undergo a hysterectomy, or possibly even radiation and/or chemotherapy.

Colorectal cancer

“Colon cancer is preventable. Get screened.”

— Emina Huang, M.D.

Signs and symptoms: Signs and symptoms of colorectal cancer include digestive problems or blood in stool, but these symptoms typically show up long after the cancer has established itself. This is why experts urge people to get screened.

Who is at high risk?: People at high risk for colorectal cancer include those who have first-degree family members (parents, siblings or aunts and uncles) who have had colorectal cancer or who have conditions that predispose them to it, such as inflammatory bowel syndrome or genetic diseases such as Lynch syndrome, says Emina Huang, M.D., a UF colorectal surgeon. Having a family history of other cancers can also put people at risk.

Screening techniques: The gold standard for colorectal cancer screening is the colonoscopy, says Thomas George, M.D., director of UF Health's gastrointestinal oncology program. During a colonoscopy, doctors are looking for polyps, abnormal skin growths in the lining of the colon. Polyps can be a precursor to colon cancer, so if they are found, they are removed during a colonoscopy. Because of this, a colonoscopy serves as not just a screening for cancer, but also as a way to prevent it, George says. Other tests include fecal occult blood testing, which tests for trace amounts of blood in the stool. Although this screening method is valid, if blood is detected, the patient would still have to undergo a colonoscopy. A sigmoidoscopy is similar to a colonoscopy but looks at a shorter length of the colon, and a virtual colonoscopy is a CT scan that allows doctors to see inside the colon but doesn't give them the option of removing polyps if they spot them.

Recommendations: Experts recommend people who don't have a family history of colon cancer or polyps undergo a colonoscopy at age 50. If you have family members who have had this form of cancer or polyps, talk to your doctor about getting a colonoscopy sooner. Typically, you'll only need to have a colonoscopy every 10 years.

Prevention: The best way to prevent colon cancer is to have a colonoscopy. “If a polyp stays in your colon, it has the potential to turn into cancer. All of this happens without you knowing it's there. With a colonoscopy we can control getting the polyps out, and that in and of itself is cancer prevention,” George says.



Partners

A healing gift

Stop! Children's Cancer funds new equipment for physical therapy clinic

Physical therapist Barbara Bour's first lesson in caring for someone with cancer came more than 20 years ago, when her daughter developed leukemia right before starting kindergarten. Now Bour, (pictured here with patient Tyler Kleine) a physical therapist for the UF Health Cancer Center and a faculty member in the College of Public Health and Health Professions, devotes much of her physical therapy practice to helping other children with cancer. To help, Stop! Children's Cancer recently donated \$1,500 to the Cancer Center's physical therapy clinic to help Bour purchase items she needs to help young cancer patients. Here, Bour answers a couple of questions about the award and what it means for the patients she serves.

Q. What does this donation from Stop! Children's Cancer mean for you and your patients?

A. Stop! Children's Cancer emailed me to tell me that they had decided to give me \$1,500 toward clinic needs and did so in honor of my daughter and I, which was very special to me. All equipment that the clinic uses has been provided by private donations so any donated money is used to supplement that equipment. The tools that I use are mostly aimed at making the PT treatment fun and motivating for the kids. My goal is for them to have fun while they are exercising.

Q. Why do you do what you do?

A. I love what I do because the children have such wonderful spirit. I am blessed by the job that I have. I continued working with children while my daughter was going through her cancer treatment and vowed that I would not be able to work with children who had cancer because it was too emotional for me. Then five years ago, I was given the opportunity to move to Gainesville and teach on the faculty at UF. I came to a place of total comfort where I could use both professional and personal knowledge to provide improved quality of life for these children who suffer not only from the diagnosis, but also from the treatment. This is a special population of children. I am blessed to meet each one. I relish in the fact that I can provide something to ease their experience or improve their quality of living. That is why I do what I do.

Upcoming events

Oct. 4: Panera Bread Goes Pink!

On Friday, Oct. 4, 100 percent of every delicious Pink Ribbon Bagel sold in Panera's Gainesville and Ocala cafes will benefit women's cancer research at UF Health Cancer Center.

Oct. 12: 8:30 a.m. — Pink Pumpkin Fest for Breast Cancer Awareness

Pink Pumpkin Pedal-Off Charity Bike Ride Register to ride your choice of 20, 40 or 55-mile routes to raise money for breast cancer research at UF Health Cancer Center. Visit cancer.ufl.edu/pedal-off for more info.

Oct. 12: 10 a.m. — UF Health Third Annual Pink Pumpkin Painting Party

The Pink Pumpkin Painting Party is a fun, family event designed to heighten breast cancer awareness and to honor friends and loved ones affected by breast cancer.

Visit cancer.ufl.edu/pinkpumpkins for more info.

Oct. 17: Leukemia and Lymphoma Society Light the Night Walk

For more information, email Debbie.Jeffrey@LLS.org or call 904-332-6414, ext. 2464.

Science for survival

UF researcher hopes studies will help improve pancreatic cancer's low survival rate



Faculty Spotlight

Jose Trevino, M.D.

Personalizing pancreatic cancer treatment for his patients is the main goal for Jose Trevino, M.D. It may sound like a tall order for such a deadly disease, but Trevino is determined.

"One of the limitations that we've had since we first started treating patients with pancreatic cancer is that we really don't fully understand the disease process," Trevino said.

Since joining the University of Florida's division of general surgery's pancreaticobiliary service in August 2011, the triple-threat researcher, surgeon and oncologist has focused his research on how tumors removed from a human patient grow in an animal model and how different combinations of chemotherapy impact the tumor's progression. The end goal of his research is to identify the specific chemotherapy cocktail that will work best for each individual patient.

"What I explain to (my patients) is if we get a better understanding of the microenvironment in the mouse, which is in my opinion a more representative form of

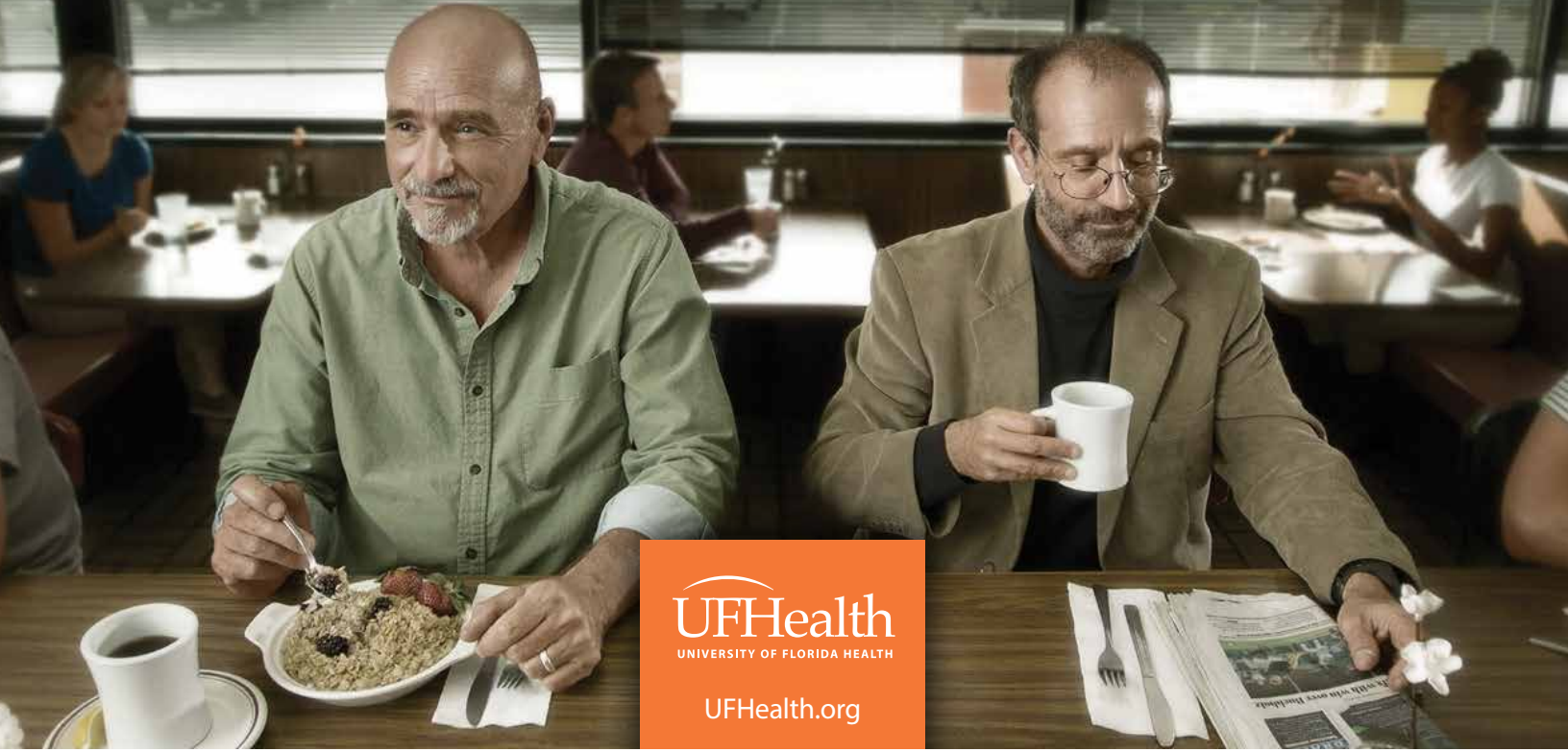
pancreatic cancer to date, we'll be able to get a better understanding of the cancer itself, with development of better treatments in the future," Trevino said.

Currently, the overall survival rate of those diagnosed with pancreatic cancer is about 5 percent, and Trevino is not satisfied. He said one reason the survival rate is so low is because science has not yet developed the "whole picture" of how cancer develops. Past studies have focused on pancreatic tumor cells grown in the static medium of a Petri-dish, but investigating how cancer cells behave in the dynamic environment of a living organism provides more in-depth understanding of tumor growth.

"The future is that ultimately we're going to recognize that every patient is a little bit different and that personalization is going to be the key to getting better treatment responses," Trevino said. "Getting there will be very time-consuming, very in-the-future, but definitely a possibility. And then things get better for our patients and we have a better survival rate." — [Rebecca Burton](#)

JOHN may have never met **PAUL**.
But we're **REALLY** glad his cancer did.

When John Peters was diagnosed with a form of cancer most doctors call “incurable,” he didn’t know what his future would hold. At UF Health, Dr. Paul Okunieff develops cancer treatments so precise that they’re changing what’s possible for patients. The connection between John and Paul may be invisible, but it’s how we move medicine forward.



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