

FALL 2014

# Believe

## IN A CURE

UF HEALTH CANCER CENTER NEWS

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FOREFRONT OF PANCREATIC  
CANCER CARE AT UF

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UNIVERSITY OF FLORIDA HEALTH

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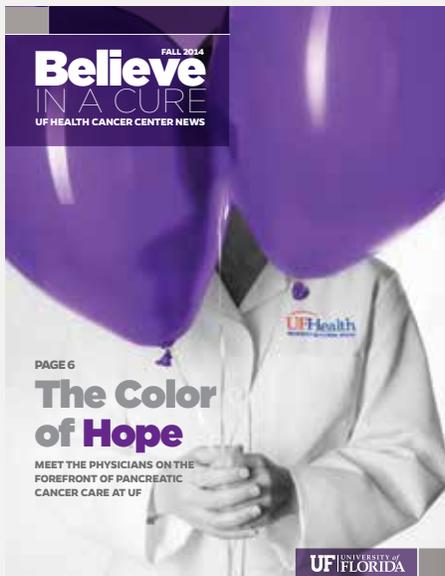


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About us



**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 **352.273.8689**.

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

In celebration of Pancreatic Cancer Awareness Month, this issue looks at some of the groundbreaking ways UF Health Cancer Center surgeons, oncologists, gastroenterologists, radiologists and pathologists are teaming up to improve outcomes for patients diagnosed with this often-fatal disease. Photo by Jesse Jones. Illustrative work by Selena Carter.

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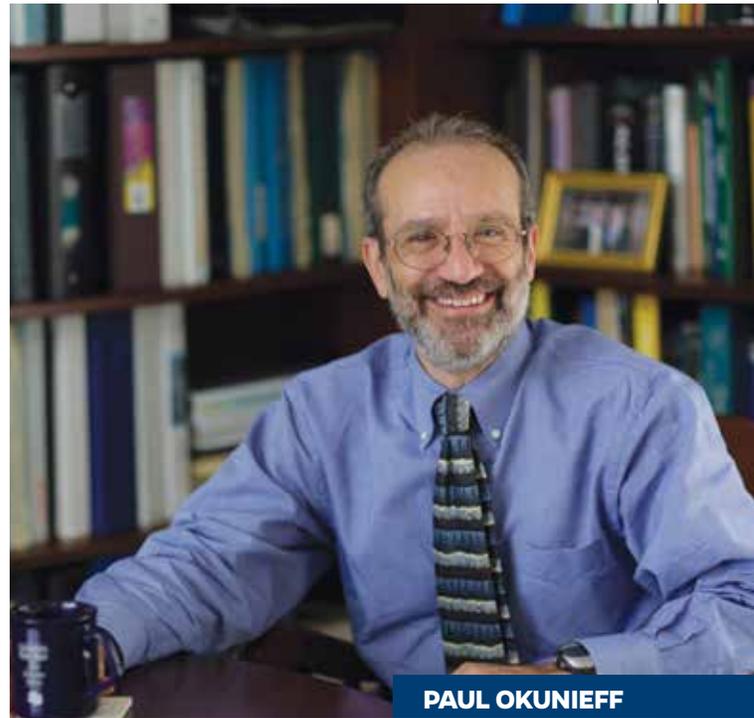
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## From the director's desk

Unlike the festive and celebratory pink breast cancer awareness events during October, Pancreatic Cancer Awareness Month in November is a more subdued and introspective affair. This may be due, in part, to the very deadly nature of pancreatic cancer.

It's a frightening diagnosis and one to take seriously, but it's not automatically terminal for every patient. Many patients can benefit from surgical removal of pancreatic cancer — the only known treatment which can provide a cure — yet, astoundingly, as many as 40 percent of these patients are never offered surgery by their doctors. Beliefs are hard to change, and the belief among doctors and patients is that pancreatic cancer cannot be survived.

I'm happy to say that isn't the case here at UF Health. Our talented surgeons, like Dr. Steven Hughes, featured on Pg.11, offer the highly specialized laparoscopic Whipple procedure, which removes pancreatic tumors using minimally invasive surgery. Our patients have access to the newest, most advanced



**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.

drug treatments available only through clinical trials, like the FOLFOX-D study led by Dr. Thomas George, featured on Pg. 8.

The most exciting thing is that these advances mean our patients can enjoy prolonged life and even long-term survival — keeping husbands, wives, friends and family members together, longer.

Best regards,

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



Rolf Renne, Ph.D.,  
and Hong Seok Choi,  
doctoral student

# Wicked Worms

## Parasitic infection causes dormant viruses to reactivate

Researchers have long wondered what causes herpes viruses — two strains of which are linked to cancer — to reactivate after remaining dormant once the initial infection resolves. Now a team of researchers, including two UF scientists, has discovered that interactions with other infections later in life can trigger these dormant viruses to resurface and cause disease.

Understanding more about how specific pathogens interact with each other could help scientists devise new and better ways to combat these infections and the diseases they cause, the researchers write in a paper published in June in the journal *Science*.

“There are eight herpes viruses that infect humans, causing diseases that range from cold sores and chickenpox to mononucleosis and cancer,” said study co-author Rolf Renne, Ph.D., a professor in the UF College of Medicine and a member of the UF Health Cancer Center. “The question has been: What happens to reactivate these viruses to cause disease?”

The study found that parasite infections later in life can spark an immune reaction that clears the way for the herpes virus to reactivate. In this case, the scientists were studying a specific herpes virus linked to a form of cancer called Kaposi sarcoma, human herpes virus 8.

“The fact that the virus can ‘sense’ the immune reaction to a worm and respond by reactivating is a remarkable example of co-evolution.”

—Herbert W. Virgin IV, M.D., Ph.D., senior author

The researchers discovered that after initial infection by the virus, a protein called interferon gamma keeps herpes in check, which explains why the virus typically remains dormant in the body. But when the immune system later responded to an infection with a parasitic worm called a helminth, another protein called interleukin 4 was released, which not only blocked interferon gamma from doing its job but also directly activated virus replication. When the virus replicates, it infects new cells, increasing the chances a cancerous tumor will form, Renne said.

“The fact that the virus can ‘sense’ the immune reaction to a worm and respond by reactivating is a remarkable example of co-evolution,” said senior author Herbert W. Virgin IV, M.D., Ph.D., of Washington University in St. Louis.

Funding from the National Institutes of Health supported the study. Contributors included lead author Tiffany Reese, Ph.D., at Washington University in St. Louis, and Hong Seok Choi, a doctoral student in the UF College of Medicine. — *April Frawley*



# CHANGING LIVES



## HYUNDAI HOPE ON WHEELS

In September, the Hyundai Hope on Wheels nonprofit organization and local Hyundai dealers presented their third \$250,000 grant for pediatric cancer research and pediatric hematology and oncology, this year to Elias Sayour, M.D., an assistant professor of neurosurgery and pediatric hematology/oncology. His research focuses on harnessing the immune system through the use of nanotechnology. During the ceremony, young patients placed their handprints on a vehicle to commemorate their battles against cancer.

### GONE CAMPING (above):

In June, Stop Children's Cancer — a local nonprofit dedicated to raising funds for pediatric cancer research at UF — sponsored Camp Boggy Creek's weekly bus ride to camp grounds in Eustis, Fla. Camp Boggy Creek is a yearround retreat for children with chronic or life-threatening conditions and their families. Campers stopped at Gainesville Harley-Davidson, where they enjoyed a box lunch, music and a visit from 98.5 KTK's Storm Roberts.



### A SUMMIT TO SAVE LIVES (far right):

Florida Senator Tony Hill speaks on the importance of cancer screening. Although cancer affects people of all races, Alachua County's minority community carries a disproportionate share of the cancer burden, which can be alleviated with changes in lifestyle and early detection.

## A SUMMIT TO SAVE LIVES

More than 250 people attended the 5th Annual Gainesville Community Health and Empowerment Summit held Sept. 20. The summit offered attendees health exhibits and workshops to encourage minority residents of Alachua County to have regular cancer screenings. From left: Angela Adams, Ph.D., Folakemi Odedina, Ph.D., Paul Okunieff, M.D., Prince Odedina and Robert L. Hood, Ph.D.

# The Color of Hope

Meet the physicians on the forefront of pancreatic cancer care at UF

MORGAN SHERBURNE

In a conference room within the UF Health Davis Cancer Pavilion, the tumors of patients newly diagnosed with cancer flash on a large screen at the front of the room.

While the images of CT scans flicker, a team of gastrointestinal cancer specialists listens to the history and type of cancer of each patient.

It's the weekly meeting of the GI tumor board, a meeting in which various cancer physicians meet to discuss their patients' cases and determine treatment options.

To the layperson, the images on the screen may look like a collection of blurry shapes. But to the doctors in this room, these images tell a story.

Sometimes the story is that of a quiet killer — a disease that is often asymptomatic in the early stages, a disease for which five-year survival rates remain in the single digits: pancreatic cancer.

But for a group of specialists in this room, the story isn't over. In fact, they're intent on changing the ending — by changing the way medicine approaches pancreatic cancer. By using increasingly sophisticated technology, repurposing cancer medications already in use, and attacking cancer when patients are at their strongest, UF doctors are making the quiet killer not only talk, but beg for mercy.

## PANCREATIC CANCER: A PROFILE

When pancreatic cancer develops, its symptoms are vague. Because the cancer sometimes keeps the pancreas from secreting digestive enzymes, patients lose weight. They have pain from tumors pressing against nerves that run through the pancreas. But weight loss and pain are poor diagnostic signs. The tumors themselves can be miniscule, and the pancreas is a difficult organ to access and biopsy.

"The pancreas is in a place in your body where cancer can exist and not be causing any problems at all until it's almost too late," said Thomas George, M.D., director of the UF Health Gastrointestinal Oncology Program.

"It's not like you can get a mammogram, colonoscopy or Pap smear to look for it."

Major blood vessels pass by the pancreas, and because the pancreas is situated among many lymph nodes, cancer can also spread quickly.

Pancreatic cancer is the 10th most common cancer, says George, who is currently involved in two clinical trials testing therapies for pancreatic cancer. But it's the fourth most lethal cancer.

"So we have a lot of room for improvement — not only in preventing it, but also for helping to get rid of it," George said. "By the year 2030, it is

## NOVEMBER IS PANCREATIC CANCER AWARENESS MONTH.

To find out more — or to sign up for awareness events including charity walks and runs, please visit [www.purplestride.org](http://www.purplestride.org) or [www.pancreaticcancerresearchevents.org](http://www.pancreaticcancerresearchevents.org).

projected that pancreas cancer will be the No. 2 cause of cancer deaths in the United States, unless we act now.”

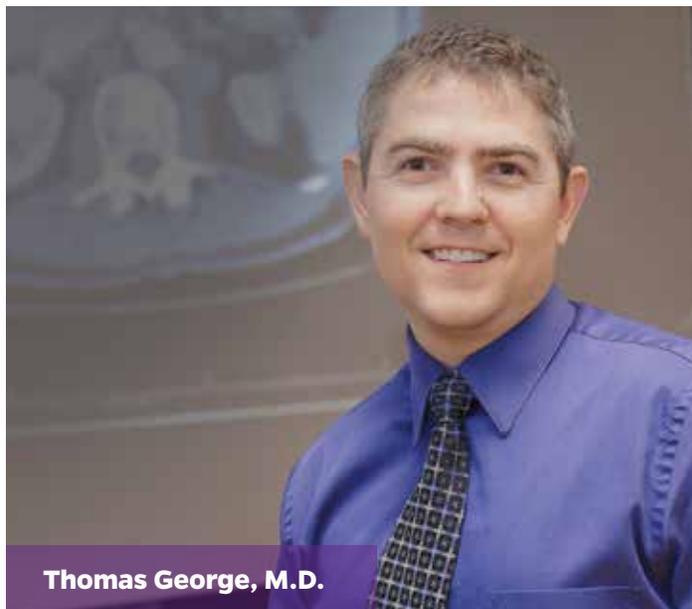
### IDENTIFYING POTENTIAL PATIENTS AND DIAGNOSING DISEASE

Christopher Forsmark, M.D., chief of the division of gastroenterology, hepatology and nutrition, works to identify pancreatic cancer as early as possible. He even works with patients who don't have pancreatic cancer, but are at a high risk for developing it. These are patients with chronic pancreatitis or genetic mutations that can lead to both chronic pancreatitis or pancreatic cancer.

“We have a number of patients and families that have those risk factors, and we try to design strategies to identify the disease as early as possible, and counsel them on strategies to reduce their risk,” Forsmark said.

To help diagnose pancreatic cancer in patients who have clinical symptoms or an abnormal CAT scan, Forsmark uses a technology called endoscopic ultrasound. Forsmark threads the scope through the patient's mouth into the stomach and the first part of the small intestine, and uses sound waves to look at the pancreas across the wall of the stomach.

“If you see a mass that looks like it might be malignant, the scope allows you to pass a needle through the wall of the stomach and into the mass to obtain tissue,” Forsmark said. That helps doctors assess whether the patient has cancer.



Thomas George, M.D.

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**“When patients are diagnosed with pancreatic cancer, physicians often opt to act early and aggressively.”** —Thomas George, M.D.

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When patients are suspected of having a pancreatic disorder, physicians act early and aggressively to diagnose the problem, George said.

“Because of that, we're finding pancreas cancer earlier, sooner and when it's more curable,” he said.

### PANCREATIC CANCER FACT SHEET

Inside your abdomen, nestled behind the lower part of your stomach, sits an organ the length of your hand. Your pancreas secretes enzymes that aid in digestion and produces hormones, such as insulin, that help regulate the metabolism of sugars.

Pancreatic cancer is a disease in which malignant cells form in the tissues of the pancreas. This year, it is estimated that more than 46,000 Americans will be diagnosed with pancreatic cancer and more than 90 percent will die — primarily because most cases are diagnosed at an advanced stage after the cancer has spread and complete surgical removal at this stage is not possible.

While there are no widely available screening tests to

detect pancreatic cancer early, there are symptoms that could lead to early detection, including changes in taste, yellowed skin or eyes, dark brown urine, skin itchiness, sluggishness, sudden weight loss or sudden onset of diabetes.

The average age range for diagnosis is 75-84, with more men being diagnosed than women. The rate of survival for five or more years after diagnosis is about 6.7 percent; however, this is higher than the 1970s when the rate was just 3 percent.

People who smoke, are overweight or have chronic inflammation of the pancreas, diabetes or a family history of pancreatic cancer are at higher risk of developing pancreatic cancer. Prevention tips include regular exercise and a healthy diet. — *Michelle Champalanne*

### EVOLVING PANCREATIC CANCER TREATMENT

The basis of one of George's clinical trials involves just that idea: treating a patient aggressively — in this case, before surgery — turning the traditional treatment on its head, he said.

“In this trial, we started using chemotherapy for these patients before their operation to accomplish a few different things,” George said. “First, from the moment a patient is diagnosed, to start killing the cancer. Second, we wanted to make sure we were killing cancer where we knew it was, but also wherever it might be that we don't see.”

George said this trial, which was recently completed, has shown that receiving chemotherapy does not compromise a patient's ability to get an operation to remove the cancer. Treating cancer before an operation also allows patients to heal and recuperate after they have undergone surgery without additional treatment afterwards.

George's second clinical trial, known as the FOLFOX-D study, tests a drug already approved for cancer treatment. In the past, the drug, dasatinib, has been used for leukemia. George is investigating how that treatment might affect pancreatic cancer, which he says has been resistant to traditional chemotherapies in the past. He is trying to find drugs that have already been approved to treat cancers that may also be repurposed to target pancreatic cancer.

“The process of finding a new medication and developing it all the way to the Food and Drug Administration approval is about a 10-year process. Patients with pancreatic cancer don't have 10 years to wait,” George said. “So let's look at what we already have access to and what we know works for other cancers, and think about repackaging those so they work for what we need them to accomplish.”

Another way the doctors approach treatment is through radiation, said Robert Zlotecki, M.D., Ph.D., medical director of the radiation oncology program. The precision and role of radiation has evolved over the 20 years of Zlotecki's practice.

The equipment has become more sophisticated: Improved diagnostic imaging can help physicians locate the malignancies much more easily and map the shape of tumors more clearly.

Part of the precision is due to the technology for the delivery of radiation therapy. Patients lie on a foam bed



Robert Zlotecki, M.D., Ph.D.

that is molded to their unique body shape. This keeps the patient still while the machine rotates around the patient, delivering 360 degrees of radiation treatment.

The shape and size of each patient's tumor is recorded into the machine, which has a series of blades that shape the radiation's beam to match the patient's tumor.

“Our technologies allow us to deliver that plan accurately and precisely each day with a very high degree of selectivity and avoidance of normal healthy tissues,” Zlotecki said.

The role of radiation has changed as well. As in George's clinical trial, physicians sometimes use it before a patient has undergone surgery to remove a tumor.

“Radiation and chemotherapy used to be reserved until after surgery was done to ‘mop up’ any disease that could be left over after the primary procedure,” Zlotecki said. “Now, radiation therapy is very commonly being used up front, before surgery, in combination with chemotherapy.”

#### LEARN MORE

To learn about the pancreatic cancer CLINICAL TRIALS currently underway at the UF Health Cancer Center, visit <http://bit.ly/1qcOJf7>.

When patients receive surgery to remove cancer — such as the Whipple procedure, performed at UF Health Shands by Steven Hughes, M.D. — Forsmark helps oversee the patients’ nutrition.

“One of the most common symptoms of pancreatic cancer is weight loss and the loss of muscle mass,” Forsmark said. “This makes the patients less able to tolerate surgery, gives them more prolonged recovery times and wound healing.”

Tumors will often block a patient’s pancreatic duct, which secretes digestive enzymes that typically go to the small intestine to help patients absorb fats and proteins. Without these enzymes, patients lose weight.

“We do have enzyme pills we give to patients, but the vast majority of patients are not on enzyme treatment. In both situations, those patients don’t absorb nutrients normally,” Forsmark said.

In an upcoming study, Forsmark will be examining patients with pancreatitis and pancreatic cancer to determine what percentage of these patients are treated with digestive enzymes, and the health of the patients who are on an enzyme treatment.

### THE FUTURE OF CANCER CARE

With advanced, metastatic pancreatic cancer, patients often live for less than a year following diagnosis.

“That’s an abysmal outcome,” said Carmen Allegra, M.D., chief of the division of hematology and oncology. “Despite everything, all the technology, the radiation, surgery and chemotherapy, pancreatic cancer is a devastating diagnosis and a devastating disease just screaming for better therapies.”



Christopher Forsmark, M.D.

Allegra said just as radiation therapy equipment has evolved to become more precise, so have physicians’ approaches to particular patients’ cancers. That means delving into the genes of individual cancers.

Chemotherapies being developed both by the pharmaceutical industry and at UF will start to target specific genetic abnormalities, Allegra said. Part of what makes this kind of engineering possible now



Carmen Allegra, M.D.

**“Hopefully, we will be able to look at their genome and see how it’s changing.”**

—Carmen Allegra, M.D.

is that only recently have researchers been able to sequence the genome of a patient’s cancer relatively easily and cheaply. Researchers can use a patient’s genome to guide that particular patient’s therapy.

Even so, cancer treatment remains complicated. Cancers evolve not only with time, but with therapy.

“As soon as we put chemotherapeutic or radiation stress on that cancer, it will evolve,” Allegra said.

Allegra hopes they will be able to study the genome of a patient’s cancer by capturing tumor cells that circulate in the patient’s blood — avoiding difficult tumor biopsies, and testing those cells for genomic changes. That way, as the patient’s cancer evolves, so can his or her treatments.

“Hopefully, we will be able to look at a patient’s genome and see how it’s changing,” Allegra said. “That way, we can guide our therapy to most precisely match the tumor they currently have.”

## UF Health research fund for treatment-resistant breast cancer gets lift from local charity

Co-founders of the Pink Pumpkin Pedal-Off charity bicycle ride, Barb Thomas and Barb Wills, presented an \$18,000 check to the UF Health Cancer Center on Aug. 8. The gift comes from the Gainesville-based nonprofit group Collaboration of Scientists for Critical Research in Biomedicine, or CSCRB Inc., which hosts the Pink Pumpkin Pedal-Off.

Nearly 100 percent of the monies raised by the organization's charity bicycle ride benefit the UF Health Cancer Center's treatment-resistant breast cancer research fund. The fund provides seed grants to UF

The fund provides seed grants to UF scientists seeking new treatment options for triple-negative breast cancer.

scientists seeking new treatment options for triple-negative breast cancer, an aggressive form of breast cancer that does not respond to established therapies as well as other breast cancers.

The organization has raised more than \$33,000 in support of UF Health research of treatment-resistant breast cancer. — *Lindy Brounley*

## PINK PUMPKIN PEDAL-OFF

On the morning of Saturday, Oct. 4, more than 320 participants gathered at the UF Cancer and Genetics Research Building for the Pink Pumpkin Pedal-Off, a charity bike ride to honor those affected by breast cancer and to raise money for breast cancer research at the UF Health Cancer Center.



# Whipple Wonder

**H**e's an expert on the intricate. Steven J. Hughes, M.D., was named chief of general surgery in the UF College of Medicine four years ago. While he performs a variety of surgeries daily — and a little more than 100 pancreatic surgeries a year — there is one procedure that is considered his specialty.

It also happens to be particularly difficult.

The Whipple procedure, named after Allen Whipple, the first doctor to perform it in 1935, is used to treat certain cases of pancreatic cancer by removing part of the pancreas — an organ located in an area of the body where one wrong move could prove fatal. The removal of the pancreatic tumor must be done amid the blood vessels that go to the liver, stomach and small intestine — a network whose navigation requires an unusual amount of skill and dexterity.

“It's a very complex area of anatomy,” Hughes said.

The Whipple procedure is one of the most common and successful operations to remove pancreatic cancer. But because the surgery involves removing portions of the pancreas, bile duct and small intestine, as well as the gallbladder, then reconstructing the intestinal tract, it also has a high risk of complications.

“We know that we can remove certain things and safely do so, but push it and you can cause the complication rate to skyrocket,” Hughes said. “So we are walking a fine line between providing a hope for cure and causing harm.”

Hughes was the first at UF Health to perform the procedure in 2010. Now, Hughes also helps train other



## Faculty Spotlight

Steven J. Hughes, M.D.

physicians. His teaching process is heavily influenced by his drive to improve health care and provide patient-centered care to all patients, he said.

“I like that UF always wants and tries to do the right thing for patients,” Hughes said. “This culture really supports my desire to always try to put myself in the patient's position, and to develop a treatment plan that matches their particular situation and priorities.”

Although he has years of experience, Hughes is mindful of how much there is left to learn. Each surgery, regardless of how routine a procedure may be, has something that sets it apart from the previous one. No two surgeries are ever alike, he said.

“It's one of the reasons I went into surgery,” Hughes said. “It's always something different.” — *Dorothy Hagmajer*

## AWARDS & RECOGNITIONS

- On May 2, the board members of STOP! Children's Cancer of Palm Beach County awarded **William Slayton, M.D.**, division chief of the department of pediatrics' division of hematology and oncology with a \$30,000 check at their annual luncheon. This award benefits the organization's endowment at UF, which supports the division.
- The Florida Department of Health has awarded \$1.6 million to UF to help establish a statewide network of tobacco cessation programs in doctors' offices around the state in a coordinated effort to prevent cancers and other cardiovascular diseases related to tobacco use. Led by **Betsy Shenkman, Ph.D.**, chair

of the department of health outcomes and policy and **David R. Nelson, M.D.**, director of UF's Clinical and Translational Science Institute, the network will cover 39 percent of Florida's patient population.

- In partnership with Florida A&M University, **Folakemi Odedina, Ph.D.**, the director of the UF Health Cancer Center Health Disparities Program, has been awarded a \$1.35 million grant from the National Cancer Institute to establish a Florida Minority Cancer Research & Training Center to serve as a unifying structure for minority cancer research and training.



Folakemi Odedina, Ph.D.



## Blazing a Trail for Patients

On Oct. 18, the Levy County Horse Club held the 14th Annual Breast Cancer Awareness Trailride in Goethe State Forest to benefit breast cancer patients at UF Health Cancer Center.



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