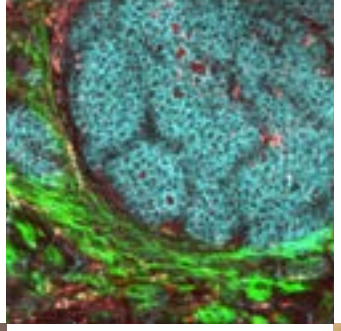
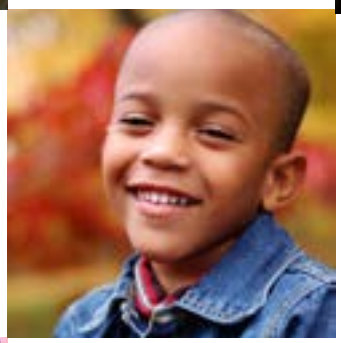
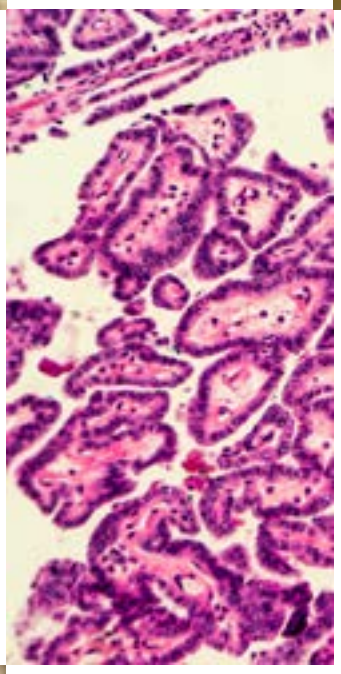
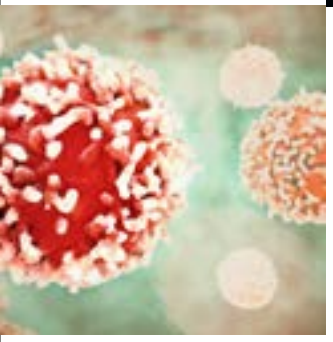






LOUISIANA
CANCER
RESEARCH CENTER



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DEAR FRIENDS,

I am pleased to share with you the impressive achievements of our member researchers at the Louisiana Cancer Research Center (LCRC) in 2018. Their coordinated efforts resulted in important strides in the fight against cancer in our region, which suffers from some of the highest rates in the country.

The LCRC was established to conduct research and promote education in the diagnosis, prevention, and treatment of cancer. Since inception, our primary strategic focus has been on building a unified cancer center, based on collaborative partnership, capable of attaining recognition as a National Cancer Institute (NCI) designated Cancer Center.

As we advance toward this goal, our achievements along the way are improving the lives of people throughout the Gulf South. LCRC members continue to increase the number of clinical trials enrolling patients in the region. The local availability of cutting-edge treatment options allows more patients to remain at home for their treatment, while expanding access to those unable to travel.

In addition, LCRC scientists are conducting research that is having international impact, from investigating a unique genetic mutation and its association with liver cancer to developing new drug treatments that hold the promise of improving outcomes for a subset of breast cancer patients.

LCRC members are experiencing unprecedented grants success. The National Cancer Institute awarded the state's first-ever Specialized Programs of Research Excellence grant to researchers based at LSU Health to better understand and address cancer health disparities in Louisiana. A Tulane University researcher received a significant four-year NCI award to develop a tool that has the potential to reduce tumor recurrence.

The Louisiana Campaign for Tobacco-Free Living is making important progress toward the goal of a smoke-free state. Six additional municipalities, including Baton Rouge, passed comprehensive indoor-smoke free policies. Nearly 5,000 Louisiana residents called the Tobacco Quitline.

We expect further advancements in the coming year as our research partners continue their collaboration. The Center's leadership is committed to continuing this trajectory and has completed a period of intensive strategic planning. The resulting strategic framework will guide the expansion of the LCRC as we navigate the future toward NCI designation.

SVEN DAVISSON
Chief Administrative Officer
& Interim Chief Executive Officer

PRECISION MEDICINE: TAILORING TREATMENT TO THE INDIVIDUAL

Cancer is the #2 killer in Louisiana, but not a single one of the more than 26,000 cases predicted to be diagnosed in Louisiana in 2019 will be alike.

Today, we are honing in more precisely on this killer. LCRC researchers are developing ways to tailor cancer therapies for each patient. Precision medicine is providing physicians new treatment options for each individual. Advances in understanding the genetic drivers of cancer and the role of the immune system in the fight hold significant promise for the development of therapies personalized to the individual patient.

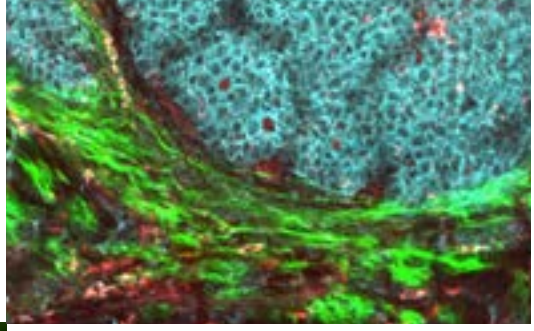
Each cancer occurrence is an evolutionary event with its own genetic changes modulating over time in response to treatment. Similar changes may be found in different types of cancers. LCRC researchers are making progress identifying these cancer-causing modifications and developing targeted therapies that address them. This is providing new treatments for physicians to choose from, altering the treatment to complement the personalized genetic makeup of each patient's cancer.

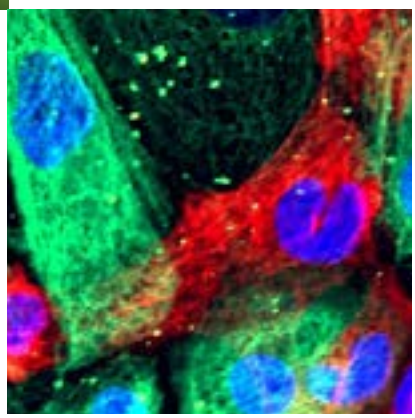
Immunotherapy leverages a patient's own immune system to fight disease by locating hidden cancer cells. LCRC researchers are developing approaches that mark these cells making them easier for the immune system to detect and destroy. They are also working on techniques to boost a patient's immune system to strengthen the response it mounts against cancer.

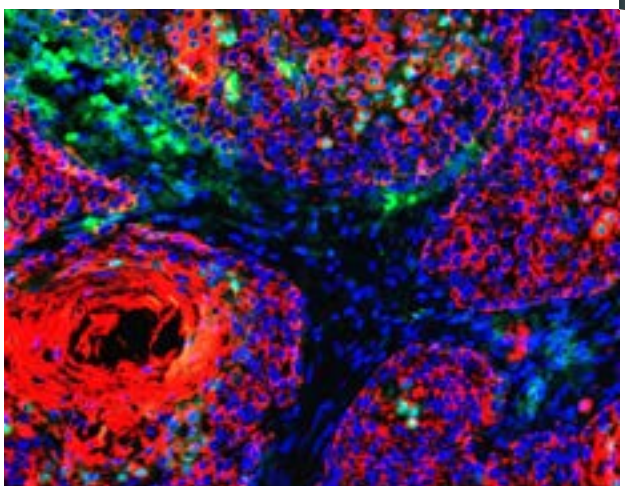
These advancements are not confined to the lab. They are increasingly accessible in communities in rural areas throughout the state of Louisiana. LCRC and its partners are making these new treatments available to patients via our expanding clinical trials network.

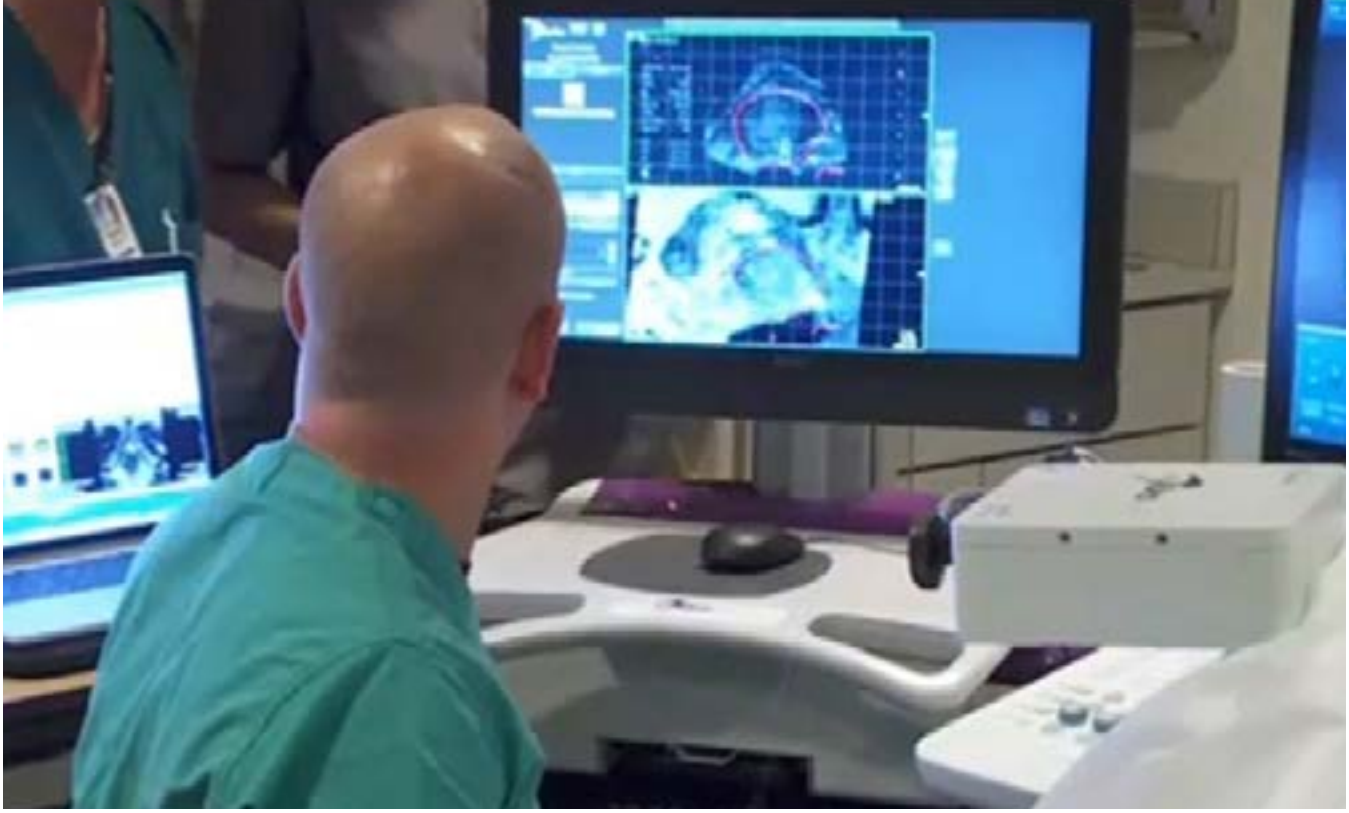
Not long ago, the prospect of personalizing one's cancer treatment based on their unique genetic makeup was merely visionary. Today, it is a reality at the Louisiana Cancer Research Center.

Our cancer prevention, education efforts, and genetic screening are helping to identify cancer in earlier stages and we are treating them more effectively than ever, saving more lives everyday.









LSU HEALTH NEW ORLEANS LEADS U.S. RECRUITMENT FOR ADVANCED PROSTATE CANCER CLINICAL TRIAL

LSU Health New Orleans Scott Cancer Center has enrolled the first patients in the United States in a National Cancer Institute/Southwest Oncology Group clinical trial for men whose prostate cancer has spread. The Phase III multi-center trial will compare the outcomes of treating men diagnosed with metastatic Stage 4 prostate cancer with standard systemic therapy or with standard systemic therapy in combination with either surgery or radiation therapy.

"The main question being asked is, does treatment of the residual cancer left within the prostate affect how long a patient will survive and with good quality of life," says Scott Delacroix, Jr., MD, Director of Urologic Oncology at LSU Health New Orleans School of Medicine and principal investigator of the LSU Health New Orleans study site. "Currently, when a patient presents to the doctor when the cancer has already spread to the bone or other organs, the standard of care is to treat them with medications called 'systemic' therapies, which are carried by the bloodstream to cancer cells wherever they are. Patients with metastatic prostate cancer are not usually offered therapy targeting the prostate where the cancer originated, and often the bulk of the cancer still remains."

This trial seeks to determine if adding either prostate surgery or radiation therapy to the usual combination of drugs will delay the progression of the disease and result in improved survival. This

study will determine if this different treatment approach is better, the same, or worse than the usual approach. Results may help improve treatment for people in the future.

According to the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program, the incidence rate of prostate cancer in Louisiana men is higher than the national average. The SEER Program is one of the most authoritative sources of cancer incidence and mortality facts and figures. LSU Health New Orleans' Louisiana Tumor Registry is one of the 16 competitively funded cancer registries that make up the SEER Program, which found that in Louisiana, the rate is 137.4 cases per 100,000 men, while the US incidence rate is 109 per 100,000. In Orleans Parish, the prostate cancer incidence rate is 152.6 per 100,000. The highest prostate cancer incidence rate in the state is in West Baton Rouge Parish, with 187.8 cases per 100,000.

"This study is the largest interventional NCI clinical trial for men who present with Stage 4 prostate cancer in the past 25 years," adds Dr. Delacroix. "It has the potential to impact the treatment for men with Stage 4 prostate cancer in multiple ways including not only answering the question of improving survival, but also potentially finding distinct groups of patients with prostate cancers that behave and respond differently to therapies. The National Cancer Institute, Southwest Oncology Group and the national principal investigator Dr. Brian Chapin from the University of Texas MD Anderson Cancer Center should be congratulated for making this trial available to all men with newly diagnosed Stage 4 prostate cancer."

The LSU Health New Orleans Urologic Oncology Section at the LSU Healthcare Network in Metairie enrolls the largest number of patients in National Cancer Institute-based clinical trials for urologic cancers in the region. Delacroix is a member of the Genitourinary Steering Committee, one of the Scientific Steering Committees of the National Cancer Institute's Coordinating Center for Clinical Trials. He has no financial ties to any pharmaceutical company.

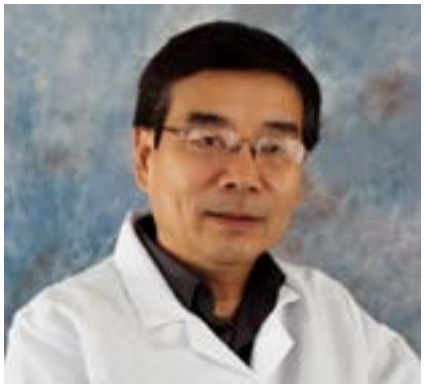
RESEARCHER EXPLORES UNIQUE GENETIC MUTATION ASSOCIATED WITH LIVER CANCER

Dr. Hua Lu, chair of the Tulane University Department of Biochemistry, and his research team recently published a study in *Molecular Cell* that sheds light on a unique genetic mutation believed to be associated with a higher incidence of liver cancer in China and some African countries.

"P53, a protein that normally functions as a tumor suppressor, preventing the growth and spread of cancerous cells, is highly mutated in most human cancers, causing a loss of normal function," said Lu.

In some parts of China and Africa, the mutation of p53 in liver cancers occurs mainly at one particular amino acid - a "hot spot" in the genome.

"We believe this hot spot mutation is highly associated with exposure to the carcinogenic chemical aflatoxin B1, which is produced by fungi that infect food stores, like peanuts and some dried foods, in China and Africa," said Lu.



These areas are particularly vulnerable because of warm, moist climates and limited access to air conditioning or refrigeration. "Many of those who eat these foods don't realize they are infected with the fungi," said Lu. "Fortunately, this is not a problem in the United States or other countries with more modern food storage methods."

Unlike the U.S., where Hepatitis C is associated with liver cancer incidence, it's the B strain (HBV) that is more prevalent in China and Africa. Scientists believe the combination of aflatoxin B1-induced P53 mutation and exposure to HBV creates an environment conducive to the development of liver cancer by reprogramming P53 to help promote tumor growth.

"The mechanism through which this transformation takes place is not entirely clear and is the focus of this paper," said Lu. "Our study unveils a unique molecular pathway that renders mutated p53 more oncogenic in promoting liver cancer cell growth." This pathway could ultimately become a target for the therapeutic treatment of liver cancer.

PROSTATE CANCER PATIENTS TARGET OF NEW $1.6M STUDY

LCRC researcher has won a $1.6 million grant to develop a tool that could lower tumor recurrence in cancer patients, especially those with prostate cancer.

J. Quincy Brown, PhD, Tulane University associate professor of biomedical engineering, will join forces with what he calls an interdisciplinary "dream team" of engineers, mathematicians and clinicians to develop a rapid microscopy scanner to assure that tumors are completely removed during surgery.

The four-year grant is from the National Cancer Institute of the National Institutes of Health.

"Cancer patients often undergo surgery to remove the tumor as a first strategy for cure," Brown said. "Removing the tumor completely during surgery is an important goal to achieve. Yet it is difficult to determine in real-time if tumor removal is successful due to the lack of available tools. Leaving tumor behind in the patient can contribute to the cancer coming back and need for additional harmful treatment."

Brown said assuring total tumor removal is especially important in prostate cancer surgery,

J. Quincy Brown, associate professor of biomedical engineering, will work with engineers, mathematicians and clinicians to develop a tool to assure that tumors are completely removed during surgery.

during which the surgeon is trying to remove all of the cancer while leaving behind nerves and vessels that are important for the patient's quality of life after surgery.

If successful, the new device will scan the entire prostate surface for residual tumor within 10 minutes of removal. It will provide a Google maps-style image of the entire organ surface that will enable doctors to determine, down to the single cell level, whether any tumor has been left behind in the patient. Once completed, Brown and his team will test the device on 250 patients.

Tulane collaborators on the project are pathologist Dr. Andrew Sholl, urologist Dr. Jonathan Silberstein and mathematics professor Michelle Lacey. The team also includes Dr. Stephen Freedland, a urologist at Cedars Sinai Medical Center, and Dr. Jonathan Epstein, a pathologist at Johns Hopkins Medical Center.

Dr. Oliver Sartor, C.E. and Bernadine Laborde Professor of Cancer Research at Tulane University School of Medicine, was lead author of the comprehensive clinical review article covering the latest developments in treatment for advanced prostate cancer.

LCRC ONCOLOGIST OUTLINES PROSTATE CANCER TREATMENT ADVANCES IN *NEW ENGLAND JOURNAL OF MEDICINE*

Tulane University medical oncologist Dr. Oliver Sartor is lead author of a new comprehensive clinical review article in the prestigious *New England Journal of Medicine* that covers the latest developments in treatment for advanced prostate cancer.

"It is a state-of-the-art review that sets the stage for how advanced prostate cancer is managed today," said Sartor, MD, medical director of Tulane Cancer Center and C. E. and Bernadine Laborde professor of cancer research at Tulane University School of Medicine.

The *New England Journal of Medicine* is one of the most-cited and highest impact medical research journals in the world. Other than skin cancer, prostate cancer is the most common cancer in American men. There are almost 165,000 new cases of prostate cancer diagnosed annually and 29,400 deaths from the disease each year, according to estimates from the American Cancer Society.

For years, androgen-deprivation therapies (ADT) were the only treatments available for prostate cancer that spread within the body. The drugs block testosterone, which spurs prostate cancer growth. ADT treatments eventually stop working when tumors develop resistance.

The review covers six of the major drugs that are increasing survival length for prostate cancer patients whose cancer has spread to the bone or other parts of the body. The drugs include docetaxel, abiraterone, cabazitaxel, sipuleucel-T, enzalutamide and radium 223.

Most treatments were initially used after ADT failed, but doctors are seeing success in using some of the drugs much sooner, Sartor said.

"For many years abiraterone was not given until there was evidence of a progressive disease after initial hormonal therapy. But today for a significant subset of patients we are bringing the abiraterone up front. It seems to have even more success treating men in the initial phases of treatment as opposed to the subsequent," Sartor said. "Same is true for a chemotherapy called docetaxel."

The review article also details how cancer genetics are playing roles in treatment and predicting disease progression.

"Prostate cancer is changing not only from a therapeutic perspective but also from a genetic perspective," Sartor said. "The article is talking about the new interplay between the genetics and therapy prognosis and implications — who is at risk, understanding the implications for genetic alterations in the disease, understanding the familial implications for those who might be diagnosed with genetic defects and also how those therapies might in fact be altered by the underlying genetics that we find."

Looking ahead to future advances, Sartor said personalized medicine targeting individual patients holds promise.

"You can see how the field is going from both the genetic and immunology perspective," he said. "We're getting better about how we choose our therapies in individual patients and are beginning to personalize the therapies in ways that we could not have done previously."

LCRC RESEARCHERS RECEIVE THE FIRST RESEARCH EXCELLENCE (SPORE) GRANT IN THE HISTORY OF LOUISIANA

Drs. Augusto Ochoa, MD, Director of the LSUHSC/Cancer Center and Dr. Lucio Miele, MD, PhD have been awarded a Specialized Programs of Research Excellence (SPORE) grant from the National Cancer Institute entitled Understanding and Addressing Cancer Health Disparities in Louisiana.

UNDER THE LEADERSHIP OF THE LSU STANLEY S. SCOTT CANCER CENTER IN NEW ORLEANS (LSU-CC-NO) AND IN PARTNERSHIP WITH INVESTIGATORS FROM ACADEMIC AND MEDICAL INSTITUTIONS IN THE STATE, WE HAVE AGREED TO CONDUCT RESEARCH UNDER THE NEW GULF SOUTH CENTER FOR RESEARCH AND SOLUTIONS IN CANCER HEALTH DISPARITIES (GULF SOUTH-CARES-CHD).

Cancer health disparities represent a major public health crisis in the state of Louisiana and the Gulf Coast. The citizens of this region have to contend with cancer incidence and mortality rates that are among the highest in the nation. In addition, we have a very high incidence of specific malignancies that disproportionately affect minorities and the underserved citizens of the region. Triple negative breast cancer, hepatocellular carcinoma, endometrial cancer, advanced prostate cancer, renal cell carcinoma, among others, are more common and appear to be more aggressive among minorities. Complex socio-economic and political reasons and an increase in co-morbidities, such as obesity, may in part help explain the origin of some of these health disparities. However, increasing evidence from genomics and cancer biology, including our work, has started to shed light on the biological basis for some of these inequities, and suggests specific interventions to help ameliorate the impact of these diseases and improve patient outcomes. They plan to use this P20 planning grant to establish research projects that bring together the best investigators and institutions in Louisiana who are conducting research on the genetics/genomics, immunology, and clinical and public health aspects of cancer with special emphasis on health disparities. Under the leadership of the LSU Stanley S. Scott Cancer Center in New Orleans (LSU-CC-NO) and in partnership with investigators from academic and medical institutions in the state, we have agreed to conduct research under the new Gulf South Center for Research and Solutions in Cancer Health Disparities (Gulf South-CARES-CHD). To ensure a focused and productive effort, this P20 grant will be used to study the genomic signature and inflammation characteristics of triple negative breast cancer (TNBC), a disease that disproportionately affects young African-American women in Louisiana. We believe that understanding the genomics and inflammatory biology of specific cancers may provide insights into mechanisms of resistance to neoadjuvant chemotherapy and help identify and test potential interventions for improving the therapeutic efficacy of current and future treatments. Besides creating competitive teams of researchers, we will build the necessary intellectual and organizational infrastructure and develop the preliminary data to plan and support research projects that qualify for a SPORE application. Our combined expertise, the unique patient populations available in Louisiana, and the commitment of our institutions will enable us to achieve these goals, which will improve prevention, diagnosis and treatment of cancer in underserved populations, both in Louisiana and globally.

Cancers that cause major health disparities disproportionately affect the African-American minority population, in particular women, in Louisiana. Advanced breast, prostate, liver, kidney and endometrial cancer are frequent in our minority population. Although socioeconomic differences and access to health care have helped explain some of these inequalities, genomic and biological data has also been implicated in the development of these difficult to treat malignancies. Poor response to current chemotherapy regimens and worse outcomes are commonly seen. We have created Gulf South-CARES, bringing together regional investigators conducting research in cancer health disparities to generate data for understanding the biological and social determinants of health disparities and developing new interventions and clinical trials that address these inequalities.

LCRC RESEARCHER FOCUSES ON HIV RELATED CANCERS

LCRC RESEARCHER FOCUSES ON HIV RELATED CANCERS IN SOUTHERN LOUISIANA, WHICH CONTAINS 2 OF THE TOP 5 CITIES IN THE UNITED STATES FOR HIV INCIDENCE RATES PER CAPITA AND DISPLAYS A DISPROPORTIONATE BURDEN OF HIV/AIDS-ASSOCIATED MALIGNANCIES.

Michael E. Hagensee, MD, Ph.D. has been awarded two clinical trial grants within the AIDS Malignancy Consortium (AMC). One, the ANCHOR study (Anal Cancer HSIL Outcomes Research) will determine if treatment of high grade squamous intraepithelial lesions (HSIL) is effective in reducing the incidence of anal cancer in HIV-infected men and women. The second funded program is entitled, "A Randomized, Phase III Study of Intra-anal Imiquimod 2.5% vs. Topical 5-fluorouracil 5% vs. Observation for the Treatment of High-grade Anal Squamous Intraepithelial Lesions in HIV-infected Men and Women. A primary objective of this study is to assess the efficacy of treatment for advanced high-grade anal lesions in HIV+ men and women examining 2 topical medications.

The AIDS Malignancy Consortium (AMC) is a National Cancer Institute-supported clinical trials group founded in 1995 to support innovative trials for AIDS-related cancers. The AMC is composed of 36 clinical trials Sites worldwide, five Working Groups, an Administrative Office, a Statistical Office, and an Operations and Data Management Office. Collectively, these components develop and oversee the scientific agenda, manage the groups' portfolio of clinical trials and other scientific-based studies, and help to develop new protocols. The AMC mission is to investigate new treatment and prevention interventions for malignancies in people living with HIV and to study the pathobiology of these tumors in the context of clinical trials. Four working groups of the AMC deal with the cancers that affect HIV-positive patients—Kaposi's sarcoma, Lymphoma, Human Papillomavirus-related Cancers (anal and cervical cancers), and Non-AIDS Defining Cancers (for example, lung cancer, head and neck cancer, liver cancer). In addition, all of the groups within the AMC have expanded the AMC globally to Africa and to South America in order to conduct clinical trials for AIDS-related cancers in diverse patient populations.

New Orleans and Baton Rouge in Southern Louisiana, both rank among the top 5 cities in the United States for HIV incidence rates per capita. Due in part to the effects of Hurricane Katrina and disbursement of HIV care, high incidence rates for cancers in the general population of Louisiana, and socioeconomic factors and genetic polymorphisms contributing to health disparities in the Deep South, this region displays a disproportionate burden of HIV/AIDS-associated malignancies. The LSU Health Science Center (LSUHSC) in New Orleans, as part of the statewide LSU Healthcare System including hospitals in Baton Rouge and Shreveport, serves as the major regional referral center for both HIV and cancer care in this area. The affiliated LSUHSC HIV outpatient (HOP) Clinic housed in the University Medical Center Infectious Disease Center, along with the Crescent Care Health (formally New Orleans AIDS Task Force) Clinic, near downtown New Orleans, serve as the medical home for approximately 4,000 patients, or around 20% of all HIV-infected patients in the state. In early 2013 a formal HIV Cancer Care Program was formed and expanded with external funding from the NIH/NCI to develop translational research, investigator-initiated clinical trials, and a cooperative trials portfolio focused on new therapies for virus-associated malignancies disproportionately impacting HIV patients in the Gulf South. This program has expanded to include full-time employees including an HIV cancer trials coordinator, patient navigator, community outreach coordinator, and a number of clinicians receiving salary support. These clinicians include infectious disease specialists, oncologists, a dedicated radiologist, ENT specialists, and a dedicated general surgeon for biopsies and GI procedures. In addition, a well-organized Community Advisory Board, consisting of 8 community members touched by or afflicted with HIV and/or cancer has been developed. This board is a subsidiary of the New Orleans AIDS Regional Planning Council and meets at least quarterly to advise the various HIV clinical trials investigators and staff. Current leadership is in the hands of Dr. Hagensee has been at LSU for over 20 years with a history of funding from the NIH, American Cancer Society, Doris Duke Research Foundation, Ochsner Clinic Foundation and the Howard Hughes Research Institute. He is a human papillomavirus (HPV) expert and is currently focusing on AMC trials related to anal cancer. Dr. Hagensee is also planning to open additional AMC studies focused on Kaposi's sarcoma patients and a new therapeutic vaccine to treat precancerous HPV-related anal disease.

PRECISION CANCER THERAPIES PROGRAM AND EARLY PHASE TRIALS GROWING EXPONENTIALLY

The Ochsner Cancer Institute, in partnership with Translational Genomics Research Institute (TGen), formally launched its Ochsner Precision Cancer Therapies Program (PCTP) in 2017. The program saw unprecedented growth in its second year, while continuing to bring the most innovative early phase cancer trials to the region and cutting edge genetic sequencing to patients.

Ochsner's early-phase clinical trials allow patients to receive breakthrough therapies in New Orleans, often before they are available anywhere else the world. Currently, Ochsner's PCTP has about 60 early-phase treatment trials open and has enrolled more than 100 patients in these studies in 2018. Many of these trials pair specific tumor mutations with novel drug therapies. Through an innovative partnership with Strata Oncology, Ochsner provides state-of-the-art next generation sequencing to free patients with an advanced solid tumor or lymphoma.

The program continues to generate major philanthropic support, with more than $2.5 million in gifts from grateful patients and the public. The PCTP has also earned national recognition—it was awarded the prestigious 2018 Innovator Award from the Association of Community Cancer Centers.

From L to R: Dr. Julia Cook, Administrative Director of Cancer Research; Elsa Levenes, Nurse Supervisor of PCTP; Dr. Derek Cridebring, TGEN; Dr. Marc Matrana, Medical Director of PCTP; Dr. Brian Moore, Director of the Ochsner Cancer Center; Emily Pirch, VP of Cancer Services; Stacie Smith, TGEN; Dr. Laura Finn, Deputy Medical Director for Hematology Studies, PCTP.

In addition, the PCTP has also created Louisiana's first and only statewide Molecular Tumor Board. The Tumor Board consists of scientists, oncologists, pathologists, and other physicians who meet virtually to discuss complex genomic sequencing data and work together to develop personalized treatment plans for individual patients.

"As our program continues to grow, we have seen an enormous response from the patients and providers of our region." said Marc Matrana, M.D., Medical Director of the PCTP. "It brings me great joy to work with scientists and companies around the world to bring breakthrough treatments right here to New Orleans. The tremendous level of new hope that the Precision Cancer Therapies Program team has provided to the cancer patients of our region and beyond has been humbling to see."

LCRC HOSTS NATIONAL AACR-MICR DISTINGUISHED LECTURE SERIES

Dr. Augusto Ochoa, MD, Director, LSU Cancer Center and Co-Director of the LCRC hosted the AACR-MICR Distinguished Lecture Series. The theme for this year's annual event in New Orleans was "Advances in Cancer Disparities Research: Understanding the Drivers vs. Passengers". Featured speakers from around the nation included:

AACR-Minorities in Cancer Research Distinguished Lectureship Series (DLS) is designed to allow leading researchers and survivor advocates from around the world the opportunity to provide scientific presentations to faculty and students of local universities in the host city of an AACR conference.

It has been estimated there are over 15.5 million cancer survivors in the United States (U.S.). Even though cancer-related mortality is on the decline for many cancers, there remains specific population groups in the U.S. that continue to suffer disproportionately from cancer and may not be represented in the community of cancer survivors. Advances in cancer disparities research has increased our understanding of the confluence of factors (biological, environmental, and system-level) associated with this disproportionate impact. This symposium featured innovative and highly relevant research that addresses the *Drivers* and the *Passengers* of cancer disparities. Faculty, students, and community members were invited to attend and engage in a robust conversation highlighting thought-provoking and innovative scientific developments in research related to advancing health equity among African Americans living in urban and rural settings as leading experts' presented strategies to address and overcome cancer disparities.

From L to R: Dr. Brian M. Rivers, Col. James E. Williams, Dr. Victoria L. Seewaldt, Dr. Augusto Ochoa, Dr. Beverly D. Lyn-Cook, Dr. Michael Hagensee, Dr. Rick A. Kittles, Dr. Lucio Miele.

LCRC SUPPORTS DRUG DISCOVERY RESEARCH

Guangdi Wang, Ph.D. is a professor at Xavier University of Louisiana whose research has focused on developing effective therapeutic agents for the treatment of breast cancer. LCRC has provided crucial early funding for his research projects between 2007 and 2014. The LCRC funds have been used to purchase state-of-the-art equipment, support research scientists working in Dr. Wang's laboratory, and provide release time for Dr. Wang to dedicate his effort to breast cancer research. Over the past ten years, these LCRC funds, along with NIH grant funding, have enabled significant progress on the development of breast cancer therapeutics. Dr. Wang's team has developed several new endocrine therapeutics for hormone positive breast cancer that are in advanced preclinical development. These novel endocrine therapy drugs can significantly improve clinical outcomes by providing a more potent active ingredient with greater bioavailability to achieve higher patient response rate. This improvement could impact up to 80% of all breast cancer patients at risk of disease recurrence and endocrine resistance. This advantage can be translated to improved disease-free survival and reduce breast cancer recurrence in the clinic.

The first drug is intended to overcome clinical challenges associated with poor response to a standard of care adjuvant therapy, Tamoxifen. Dr. Wang's laboratory has found a solution to overcoming impaired metabolic activation of tamoxifen, using two highly potent selective estrogen receptor modulators. Both are 10 times more potent than tamoxifen, ensuring maximal therapeutic efficacy at a substantially lower dosage. Xavier University has licensed the technology to Xavier's spinoff startup biotech company, Zenopharm, to prepare for human clinical trials. The company is actively seeking funds to complete work required for an investigational new drug application to FDA for approval of phase 1 clinical trial. A sublicensing agreement is being negotiated with a potential pharmaceutical company licensee and an SBIR phase 1 grant is pending.

The second drug candidate is an orally bioavailable SERD (selective estrogen receptor degrader). Most patients with advanced metastatic breast cancer eventually develop resistance to tamoxifen or aromatase inhibitors (AIs). The standard treatment of breast cancer progressing after tamoxifen and/or AIs is fulvestrant which is the only FDA approved selective estrogen receptor degrader. Unfortunately, fulvestrant has very poor bioavailability if administered orally, thus its standard route of administration is intramuscular injection, which takes 3-4 months to become effective. The Xavier team has developed an orally bioavailable selective estrogen receptor degrader which represents a promising timely solution to achieving therapeutically effective blood concentration within days of treatment, significantly reducing cancer recurrence rate, and eliminating all disadvantages of intramuscular injection. Xavier has licensed this technology to Zenopharm to prepare for first in human clinical trials. The company has recently been awarded by NCI an Small Business Innovation Research (SBIR) phase I grant in the amount of $300,000 and an SBIR phase II grant in the amount of $2 million to conduct Investigational New Drug (IND)-enabling studies. The first in human clinical trial is expected to start in the first quarter of 2020.

OVER THE PAST TEN YEARS, THESE LCRC FUNDS, ALONG WITH NIH GRANT FUNDING, HAVE ENABLED SIGNIFICANT PROGRESS ON THE DEVELOPMENT OF BREAST CANCER THERAPEUTICS.

A third breast cancer drug candidate is a potent covalent antagonist (CA) that binds to both the wild type and mutant ER (Y537S). The covalent antagonist, ZB499, was confirmed by proteomic analysis to form a covalent bond with C530 within the ER LBD and act as an irreversible antiestrogen. ZB499 was found to block ER mediated transcriptional activities and cell proliferation of ER+ breast cancer cells as well as multiple endocrine resistant breast cancer cell lines including those with tamoxifen and fulvestrant resistance, and breast cancer cells harboring mutant ER. Furthermore, ZB499 has been shown to inhibit xenograft tumor growth in a xenograft breast tumor model. Single dose pharmacokinetic studies demonstrate that ZB499, owing to its unique boronic acid structure, exhibits superior oral bioavailability in rodents compared to other nonsteroidal antiestrogens, potentially offering high systemic drug exposure as an endocrine treatment. Preliminary toxicity studies indicate that ZB499 is well tolerated in mice at repeated oral doses of up to 200 mg/kg. Collectively, all preclinical studies of ZB499 demonstrate a promising next generation antiestrogen that is effective against endocrine resistant breast cancer cells. Because ZB499 acts through covalent, irreversible binding of ER, it could lead to more durable clinical efficacy in endocrine naïve breast cancer and in recurring disease which has often become endocrine resistant. ZB499 is currently undergoing preclinical development toward IND-enabling studies.

Asim Abdel-Mageed, DVM, PhD

REPURPOSED DRUG APPROACH MAY HALT SPREAD OF CANCER CELLS

For cancer cells to spread to other places in the body — or metastasize — they need to communicate with one another.

One way they do this is through chemical messages delivered in exosomes — molecules that carry information from cell to cell. "Exosomes are routinely biosynthesized and released by cancer cells, including prostate cancer, and are implicated in cancer progression," said Asim Abdel-Mageed, DVM, PhD, Zimmerman Professor of Cancer Research at Tulane.

Currently there are no known drugs that selectively target and inhibit the biosynthesis and release of exosomes by tumor cells. To accelerate the discovery of effective drugs, Dr. Abdel-Mageed and colleagues are focusing their research on screening drugs already approved to treat other diseases or conditions to see which, if any, could be effective in blocking the activity of exosomes.

In partnership with investigators at the National Center for Advancing Translational Science and with the support of a $4.2 million NIH grant awarded in 2014, Dr. Abdel-Mageed and his collaborators investigated 4,580 known pharmacologically active compounds and FDA-approved drugs using a rapid high-volume robotic screening technique. Twenty-two — including antibiotics, antifungal medicines and anti-inflammatory agents — were effective in preventing advanced prostate tumor cells from releasing exosomes or in blocking their production. Their work was published in a recent issue of *Scientific Reports*.

"Because drug discovery from concept to market takes an average time of 12 years, our identified drugs could be repurposed for the treatment of advanced prostate cancer within a relatively short period of time," said Abdel-Mageed. In fact, combination of the repurposed drugs with conventional therapy was promising in reducing tumor burden in a pre-clinical animal model of prostate cancer. Of course, much work remains to determine which individual drugs or combinations might be useful in patients.

Scientists believe that further research into this approach could also be useful in treating other advanced cancers, as well as diseases such as Alzheimer's.

Dr. Abdel-Mageed thanks Tulane collaborators Debasis Mondal, PhD, and Raju Thomas, MD, who have been instrumental not only in the original grant application, but also in data and outcomes analysis.

LYNCH SYNDROME CAN LEAD TO CANCER — WHY PHYSICIANS DON'T TEST FOR IT

A new national survey study in *Clinical and Translational Gastroenterology* assesses barriers to physicians' experience when testing for a common hereditary syndrome that carries a high risk of developing colorectal cancer (CRC).

Lynch Syndrome, a hereditary cancer disorder that may occur in one out of 300 Americans, causes CRC in up to 80 percent of cases. Lead author Jordan Karlitz, MD, director of the Hereditary GI Cancer and Genetics Program and associate clinical professor of medicine at Tulane University School of Medicine, had previously demonstrated in the *American Journal of Gastroenterology* that, of high-risk, early-onset CRC patients studied in Louisiana, only 23 percent had tumor testing for Lynch Syndrome.

Testing rates should be 100 percent, Karlitz said. The new study strives to better understand why testing is so inconsistent.

The new study suggested that responding physicians, mainly gastroenterologists, had reservations about testing cost, unfamiliarity interpreting results, unavailable genetic counseling or lack of clarity on what type of doctor — gastroenterologists or pathologists, for example — should order testing.

The study also demonstrated that only 46.1 percent of respondents felt screening should take place during a preoperative colonoscopy biopsy, as opposed to during CRC surgery. Preoperative testing can help guide germline genetic testing decisions and the extent of colonic resection surgery.

"We need to push more for 'reflex' testing, so that testing automatically gets done," Karlitz said. "That requires protocols to be set up in medical facilities. The other issue is, just because testing is performed, someone [must be] responsible for actually acting on the results."

Lynch Syndrome gene mutations can be compared to BRCA, the gene that is associated with increased breast cancer risk. Knowing whether someone has Lynch Syndrome can significantly affect his or her treatment and follow-up care. It's also critical information for family members, who may carry the same gene.

"We want to maximize genomic education in all specialties," Karlitz added, noting that Lynch Syndrome is associated with other types of cancers as well. "There's a greater integration of genomic information in patient care decisions nowadays."

BIO ON THE BAYOU SHOWCASES TULANE AND LSU HEALTH RESEARCH

This September, the LCRC played host to the first annual *Bio on the Bayou,* a joint research showcase put together by Tulane University School of Medicine and LSU Health. Generously sponsored by Baker Donelson and the New Orleans Business Alliance and executed by Patrick Reed of LSU Health's Office of Technology Management and James Zanewicz of Tulane's Office of Research Business Development, this event featured short talks focused on the institutions' complementary, joint strengths of Oncology and Infectious Disease. Featuring talks from 12 star researchers from both institutions, the topics ranged from innovative models for breast cancer research to shared core resources that are available to both internal scientist at LCRC participating partners and external collaborators. Additionally, Dean L. Lee Hamm of Tulane and Associate Dean for Research Wayne Backes of LSU Health highlighted the synergistic research areas of both institutions in the broad areas of Infectious Disease and Oncology, respectively. Consciously crafted to appeal to outside potential partners, this event saw over 120 attendees register, eager to hear about the latest and greatest from both Tulane and LSU Health in Oncology research. Rounding off this joint event was a panel of industry professionals representing entities as diverse as pharmaceutical powerhouse Pfizer to small, nimble startups developing cutting-edge technologies. These panelists stressed the appeal of the New Orleans area as a source of potential new technologies and research strategies, as well as the importance of New Orleans and the LCRC as places to conduct clinical trials that advance the next generation of cancer treatments. The panelists also noted the importance of collaborative endeavors and spaces like *Bio on the Bayou* and the LCRC itself. Only by working together, bringing to bear diverse viewpoints and expertise on a single problem, can progress be made against cancer. Outside partners are consistently pleased to interact with LCRC researchers from LSU Health and Tulane. It is why the LCRC is such a special and vital environment and asset to its partners.

THE GEOGRAPHY OF INNOVATION CONFERENCE

On October 31, the LCRC hosted the Geography of Innovation Conference organized by the New Orleans Business Alliance. The half day event explored the development potential of innovation strategies, provided insight into the possibilities and economic impact of Innovation Districts, discussed current public incentives available for development, and offered commentary on the future impact of the BioMedical District New Orleans and the redevelopment of the former Charity Hospital.

The Honorable LaToya Cantrell, Mayor of New Orleans, provided encouraging remarks to the audience after economic development thought leader and Co-founder of New Localism Advisors, Bruce Katz, provided the keynote address. Katz regularly advises cross-sector urban, metropolitan, national and global leaders on public reforms and private innovations that advance the well-being of metropolitan areas. He is the former Centennial Scholar at Brookings Institution.

The event also featured a panel discussion moderated by Ashleigh Gardere, COO of the New Orleans Business Alliance, featuring: Gene D'Amour, Chairperson of the Bio District New Orleans, LCRC Board member, and Special Assistant to the President of Xavier University; Andy Kopplin, President & CEO of the Greater New Orleans Foundation; Michael Hecht, President & CEO of Greater New Orleans, Inc.; and Ellen Lee, Director of Community and Economic Development for the City of New Orleans.

LCRC FACULTY AND STAFF HONORED AT THE CANCER CRUSADERS ANNUAL SURVIVORS LUNCHEON

The Cancer Crusaders celebrated their 18th Annual Celebration of Life Luncheon by honoring 12 incredible cancer survivors who stand together to show the world that life after a cancer diagnosis can be meaningful, productive, and inspiring. Being diagnosed with cancer can be an overwhelming experience, from learning about the disease, to choosing a plan of treatment, managing side effects and balancing the needs of their daily life. Every cancer story is different as is each of our honorees but the outcome is the same survival!

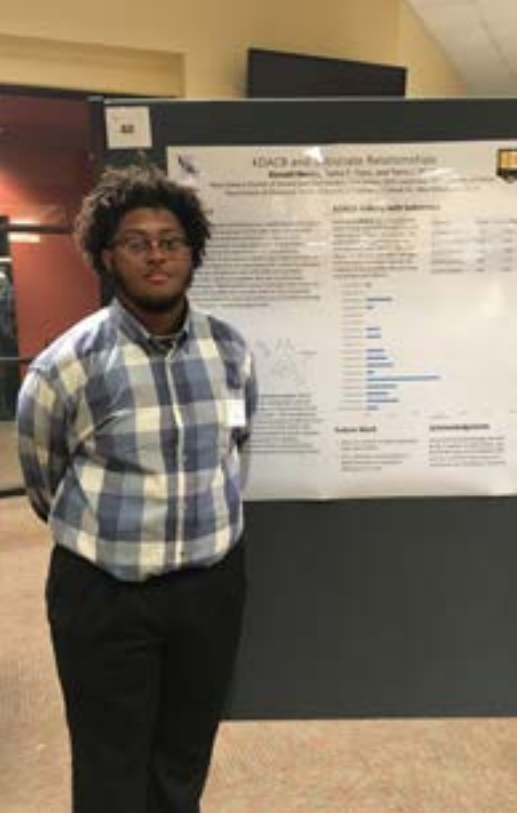
What does it take to beat cancer? Research! Since their inception in 1976, the Cancer Crusaders have donated over $4 million to LSU Health Sciences Center and Tulane Cancer Center for research. This has been accomplished with the dedication of our members and the generosity of our incredible community. The honorees includes Pat Besselman, Richard Granen, Angela Hill, Kate Launey, Kathy Piazza, Patsy Quintini, Lucille Ruffino, Karen Stall, Representative Julie Stokes, Donna Thomas, Eve Vavrick, and Roy Weiner, MD.

SAKS FIFTH AVENUE CELEBRATED ITS 20TH ANNUAL KEY TO THE CURE EVENT

Honorary Chair Governor John Bel Edwards and First Lady Donna H. Edwards, Co-Chairs Louellen Berger, Patricia Brinson, Olivia Manning and fabulous under 40 Co-Chair Amanda Merrick Seale hosted the 20th Annual Key to the Cure Gala at Saks Fifth Avenue in New Orleans. Approximately 700 people attended this year's event that raised over $200,000 bringing the total amount raised by this event to $2.4 million to support cancer research at the Louisiana Cancer Research Center.

Carolyn Elder, Vice President & General Manager of Saks Fifth Avenue New Orleans graciously opened the store to showcase the finest in fashion and demonstrated Saks' continuing commitment to the community and to cancer research.

__Top:__ Event co-chairs Governor John Bel Edwards, Donna Edwards, Patricia Brinson, Carolyn Elder, Olivia Manning, Louellen Berger __Above:__ (L-R) Michelle T. Reynoir, Phyllis Taylor, Kevin Clifford __Left:__ From Seated-clockwise: Betty Kohn, Gail Wall, Dr. William Robinson (Associate Director of Clinical Research, Tulane University), Dr. Augusto Ochoa (Co-director, LCRC and Director, Stanley S. Scott Cancer Center) __Below left:__ (L-R) Dr. Thomas Wiese (Associate Director, LCRC, Professor, Xavier University of La.), Dr. Reynold Verret (President, Xavier University of La., Suzanne Key, Sven Davisson (Chief Administrative Officer, LCRC) __Below right:__ (upper-left clockwise) Darryl Berger, Steven Putt, Marianne Kohn, Sue Singer



CANCER RESEARCH INTERNSHIP SUMMER 2018

Summer 2018 marked the fifth year Xavier University's Louisiana Cancer Research Center Program hosted a rising senior from the New Orleans Charter Science and Mathematics High School. Donald Neveu, our Cancer Research Intern, worked 25 hours per week for two months in Dr. Terry Watt's research lab where he learned the scientific process by doing experiments, collecting data and keeping a lab notebook. Donald also attended weekly scientific seminars where he learned about research projects in other Xavier labs. Donald presented and defended his research, entitled 'KDAC8 and Substrate Relationships' at the Xavier summer research poster session and at the science fair at SciHigh.

THE PRIMARY BENEFIT OF THIS INTERNSHIP IS THE EXPOSURE OF YOUNG PEOPLE TO STEM RESEARCH IN A UNIVERSITY SETTING.

The primary benefit of this internship is the exposure of young people to STEM research in a university setting. The goal of the program is to provide early exposure to research so the interns will be more likely to enter a STEM track as freshmen in college.

This program has been well received by both student interns and faculty advisors and Xavier University plans to continue this success with bright and talented high school interns in the future.

LCRC BIOSPECIMEN BANK

The Biospecimen Core Laboratory (BCL) of the Louisiana Cancer Research Center (LCRC) is a biorepository serving the LCRC researchers by collecting, banking, and providing high quality de-identified biological samples (such as tumors and blood). The BCL augments these research materials with demographic, pathologic and clinical data with the help of the Louisiana Tumor Registry (LTR) in order to enrich these samples. Ethical informed consent is obtained by our staff and donor anonymity is assured to the patients.

Availabilities of these samples is criticially important for the researchers at the LCRC. The bank has been in existence for over 10 years and has worked with more than 6,000 patients.

Serum, plasma and cryopreserved cells are processed from whole blood and tissues are snap frozen, OCT embedded and/or formalin fixed for future research projects. Prospective collections specific to IRB approved research studies or clinical trials are also becoming more popular within the core. The BCL has transitioned from traditional biobanking into a personalized biobank that can take on detailed requests from investigators.

The core laboratory has successfully procured breast and melanoma tissues for patient derived xenograft (PDX) studies. BCL staff have assisted clinical trials within LSU Health as part of the NCORP participating site of the National Cancer Institute and are now a part of a SPORE grant involving triple negative breast cancer patients. The Southeast region of Louisiana has a very diverse population and unique population of African American patients with prostate and breast cancers. This has led to an increase in funding for cancer research specific to racial and ethnic disparities.

THE SOUTHEAST REGION OF LOUISIANA HAS A VERY DIVERSE POPULATION AND UNIQUE POPULATION OF AFRICAN AMERICAN PATIENTS WITH PROSTATE AND BREAST CANCERS. THIS HAS LED TO AN INCREASE IN FUNDING FOR CANCER RESEARCH SPECIFIC TO RACIAL AND ETHNIC DISPARITIES.

RALLYING OCHSNER RESOURCES TO IMPROVE PREVENTION AND DETECTION STATEWIDE

In July 2018, LCRC member institution Ochsner Health System President and CEO Warner Thomas announced a system-wide plan to aid in cancer prevention across the Gulf South, most particularly to improve outcomes for cancer patients in Louisiana. The plan focuses on increasing education and prevention efforts, screenings, and early detection across Louisiana and the region. Thomas pledged, on behalf of the organization, to increase cancer screenings in 2018 by 40,000, and 141,000 total additional cancer screenings by 2022.

As of mid-December 2018, Ochsner had reached more than 53,000 new cancer screenings this year, surpassing the system's first-year goal with an 18 percent increase over 2017 numbers.

"We made a concerted effort to involve multiple divisions across the system and engaged leaders at all levels to prioritize cancer screening not only in our empaneled populations, but also in the communities we serve," says Brian Moore, M.D., Medical Director of Ochsner Cancer Institute. "At Ochsner, we are rallying all the necessary forces at our disposal to attack this problem from every angle that we can. The battle to reduce our statewide cancer incidence rates and outcomes requires us to think creatively, apply a multidisciplinary approach with system experts beyond medicine, and spread the message of early detection and prevention everywhere we can."

This has meant using everything from community outreach, philanthropy and marketing communications, to maximizing the shared electronic medical record (EMR) to screen more patients for breast, cervical, colon, head/neck and skin cancers.

A PLEDGE TO INCREASE CANCER SCREENINGS IN 2018 BY 40,000, AND 141,000 TOTAL ADDITIONAL CANCER SCREENINGS BY 2022.

Ochsner hosted or joined six new community events to offer patient education and screenings across the Baton Rouge and Greater New Orleans areas in 2018. Those events yielded more than 400 new patient screenings. For example, at Ochsner's annual Cancer Expo, held at Clearview Mall in Jefferson Parish, more than 130 people were screened for head/neck cancers, skin cancer and colorectal cancer. At Cash Money Records' annual Turkey Giveaway, Ochsner staff screened 110 more.

Technology has also proved a useful resource. Using the system's Epic electronic medical record, Ochsner staff identified patients with screening gaps, then followed up with those via the patient portal, MyOchsner, or by mail. The EMR was also adjusted to reflect the screening gaps in Epic Health Maintenance, prompting primary care providers to address cancer screenings at each patient visit. OB/GYN providers were enlisted to help improve cervical cancer screening rates. For colon cancer screening, Ochsner offered a FITkit option to patients who refused colonoscopies, and mailed educational pieces to more than 9,000 patients whose EMRs showed colon cancer screening gaps. Ochsner lung cancer specialists also began focused education of primary care providers about the value of and criteria for low-dose CT scans for early detection of lung cancer.

A dedicated marketing and communications push also helped. Ochsner's internal team created a dedicated cancer screening landing page that helped patients schedule appointments or access specialty care. The team secured numerous media appearances and interviews in which Ochsner oncologists and primary care physicians communicated the importance of routine screenings via local and regional media outlets.

"We are already seeing the benefit of these efforts," says Dr. Moore. "attendance at our community events was significantly higher in 2018 compared to prior years, and providers in all specialties across the Ochsner system have engaged to improve our screening rates. We are excited by our new partnerships and fully embrace the responsibility we have as the largest cancer provider in the state to educate and engage our fellow citizens to prevent, detect, and cure cancer in the region."

NEW LCRC FACULTY

PEDRO C. BARATA, MD, MSc

ASSISTANT PROFESSOR OF MEDICINE, TULANE

Dr. Pedro Barata earned his medical degree from the New University of Lisbon in 2009 and completed his medical oncology fellowship in 2016. After completion of his fellowship, he was invited to join the genitourinary group at Taussig Cancer Center, where he worked as a clinical experimental therapeutics fellow for two years. During this time, he developed a productive collaboration with his mentors, Dr. Brian Rini and Dr. Jorge Garcia, world experts in the management of patients with prostate, bladder and kidney cancer. Dr. Barata has authored or co-authored more than 30 research publications in high-quality journals, such as *Cancer*, *Annals of Oncology*, and *British Journal of Cancer*, among others. In addition, he has presented multiple abstracts at important national and international meetings, as well as authored textbook chapters and clinical reviews. He has also served as a reviewer for prestigious peer-reviewed journals, such as *JAMA Oncology, ASCO* and *Journal Global Oncology*. Dr. Barata moved to Tulane University in 2018 to continue his clinical and research work in the GU field and to help expand the program offered at Tulane Cancer Center, with a particular focus on clinical trials.

JOSEPH CHANEY, PhD

ASSISTANT PROFESSOR OF BIOCHEMISTRY, XAVIER

Dr. Joseph Chaney graduated from Southern University with a B.S. in Chemistry in May 2013. After several years working in industry at Dow Chemical he joined the lab of Chittaranjan Das at Purdue University studying and characterizing ubiquitin recycling pathways in the Ubiquitin-proteasome system. After obtaining his Ph.D. in 2015, he joined the research group of Sunyoung Kim at Louisiana State University Health Science Center in New Orleans as a postdoctoral fellow. Following the completion of his post¬doctoral training, Joseph joined the Chemistry Department at Xavier University of Louisiana in August 2017. His work focuses on molecular nano-motors essential to the cell cycle and their involvement with cancer. His goal is to use basic science to understand the structure and function of these proteins and their polymorphisms in order to find better cancer therapies.

JESSIE GILLS, M.D.

ASSISTANT PROFESSOR, LSU

Dr. Jessie Gills is a LCRC researcher and physician who specializes in urologic oncology. Following the completion of his medical degree and residency at LSU, Dr. Gills performed his fellowship at Kansas University, and then returned to LSU as faculty member in 2017. He serves as a Clinical Research Site Director for the Gulf South Minority Underserved National Cancer Institute Community Oncology Research Program, participating in clinical investigations involving bladder, renal, and prostate cancers.

KENDRA HARRIS, MD, MSc

INTERIM CHAIR, RADIATION ONCOLOGY, TULANE

Kendra Harris, MD, MSc, joined Tulane University School of Medicine's Department of Radiation Oncology in July 2018. Dr. Harris is board-certified in radiation oncology and radiobiology. She earned her medical degree from Johns Hopkins University School of Medicine and completed her residency in the Department of Radiation Oncology and Molecular Radiation Sciences at Johns Hopkins. She also completed a fellowship in patient safety at the Armstrong Institute for Patient Safety and Quality. Prior to joining Tulane, Dr. Harris practiced at Orlando Health UF Health Cancer Center where she treated patients with proton therapy, photon therapy and high dose rate brachytherapy and served as PI for a number of clinical trials. She is also currently fulfilling a three-year appointment on the Metastatic/ Recurrent Task Force with the National Cancer Institute Coordinating Center for Clinical Trials. Dr. Harris has been published in multiple journals on issues related to patient safety and is a member of the American Society for Therapeutic Radiology and Oncology (ASTRO). In 2002, prior to medical school, she was selected as a Rhodes Scholar and completed a Master of Science (MSc) degree focused on health care policy at Oxford University, and in 2013, she earned the Frank L. Coulson Award for Clinical Excellence from the Johns Hopkins University School of Medicine.

MATTHEW HAYES, PhD

ASSISTANT PROFESSOR OF COMPUTER SCIENCE, XAVIER

Dr. Matthew Hayes is a 2005 (B.S.) and 2008 (M.S.) graduate of the University of Louisiana at Lafayette, where he majored in computer science. He is also a 2013 graduate of Case Western Reserve University, earning a Ph.D. in Computing and Information Sciences. As a Ph.D. student, his research focus was in bioinformatics. Specifically, he worked under his Ph.D. advisor, Dr. Jing Li, on developing algorithms to identify genomic abnormalities relevant to cancer onset using high-throughput sequencing data.

Dr. Hayes has published several research articles on developing algorithms to analyze next-generation sequencing data for identifying genomic structural variants relevant to cancer development. Recently, his research has focused on incorporating whole genome sequencing data with chromosome conformation capture (Hi-C) data to develop algorithms to identify complex genomic structural variants.

MUTHUSAMY KUNNIMALAIYAAN, PhD

ASSISTANT RESEARCH PROFESSOR DEPARTMENT OF SURGERY, SECTION OF SURGICAL ONCOLOGY, TULANE

Dr. Kunnimalaiyaan joined the Department of Surgery at Tulane in October 2018 as an assistant research professor in the Division of Surgical Oncology. He obtained his PhD in biochemistry from Indian Agricultural Research Institute, Delhi-India. After completing postdoctoral training, he worked as a scientist-senior scientist in the Department of Surgery at the University of Wisconsin, Madison, focusing on manipulation of signal transduction pathways in neuroendocrine cancer, including thyroid cancer. He then moved to the Medical College of Wisconsin – Milwaukee as an assistant professor and continued to work on signaling pathways in pancreas and liver cancer. His laboratory at Tulane studies several aspects of thyroid cancer, including the regulation of cytoplasmic nuclear translocation of proteins associated with aggressive and resistant behavior. He is also interested in biomarker identification, miRNA signatures, and therapeutic targets for chemo-resistant cancers.

ZHEN LIN, MD, PhD

ASSISTANT PROFESSOR OF PATHOLOGY, TULANE

Dr. Lin received his MD in 2000 from Peking University Health Science Center, Beijing, and his PhD in molecular and cellular biology in 2005 from Tulane. From 2005-2007, he served as a postdoctoral researcher in viral oncology at Tulane School of Medicine, and he won the Morris F. Shaffer and Margaret H.D. Smith Shaffer Award for Excellence in Research at Tulane in 2005. Dr. Lin joined Tulane's faculty as an assistant professor of pathology in 2007. His laboratory

focuses on using sequencing-based informatics approaches and traditional molecular biology techniques to elucidate the pathogenesis of two important human DNA tumor viruses – Epstein-Barr virus and Human Papillomavirus – in various human malignant diseases, such as nasopharyngeal carcinoma, non-small cell lung cancer, and AIDS-related lymphomas.

BOLIN LIU, M.D.

PROFESSOR, DEPARTMENT OF GENETICS, LSU HEALTH

Dr. Bolin Liu joins the LCRC as an LSU faculty member in Genetics at the Stanley S. Scott Cancer Center. He obtained his medical degree and initial training in China, completed his postdoctoral fellowship at MD Anderson Cancer Center, and then obtained a faculty position at the University of Oklahoma Health Sciences Center. Dr. Liu now joins us from the School of Medicine at University of Colorado Anschutz Medical Campus, with expertise and publications covering a number of cancers, including breast, lung, and blood-based cancers. His research also focuses on epigenetics, including approaches to enhance therapeutic efficacy for cancer treatment.

NAVYA NAIR, M.D., MPH, FACOG

ASSISTANT PROFESSOR, LSU

Dr. Navya Nair returns to her hometown of New Orleans as an LSU faculty member with gynecologic oncology expertise. After completing both her undergraduate and Master's degree at Tulane University, Dr. Nair completed her medical degree at New York University in 2011. She went on to complete her residency at Emory University and her fellowship at Mount Sinai Hospital in New York. Throughout her training, Dr. Nair received several excellence awards, as well as the Eleanor Mayer Masters Scholars Humanism Award for exemplifying humanity and patient empathy. Dr. Nair is involved in the LCRC clinical trials program, and her research interests include gynecologic cancer treatment using surgery and chemotherapy, global women's health, and cancer prevention.

ERIKA PEREZ, PhD

ASSISTANT PROFESSOR OF NEUROSCIENCE: DEPARTMENT OF PSYCHOLOGY, XAVIER

Erika Perez graduated for Baylor College of Medicine in Houston, TX with a Ph.D. in Neuroscience in 2014. As a graduate student in the lab of Mariella De Biasi, Ph.D. she worked on characterizing the role of alpha 5-containing nicotinic acetylcholine receptors in the modulation of drug withdrawal symptoms, with a focus on nicotine and alcohol. She did her post-doctoral training in the lab of John Dani, Ph.D. at the Perelman School of Medicine, University of Pennsylvania in Philadelphia, PA. Her postdoctoral research continued to characterize alpha 5 nicotinic receptors, but was focused on how various alpha 5 gene variants associated with heavy smoking affected the rewarding effects of nicotine.

Dr Perez joined the Department of Psychology at Xavier this year. She will continue to study the neuronal mechanisms underlying addiction. Her lab focuses on characterizing the role of various receptor systems as viable drug cessation aids; in particular she is investigating the role of neurokinin receptors in modulating nicotine consumption. The lab uses a variety of techniques to measure drug consumption, reward, dopamine release and withdrawal-associated behaviors in mice. She is also interested developing novel rodent behavioral models to better represent human behaviors.

JESSICA SHANK, MD

ASSOCIATE PROFESSOR OF GYNECOLOGIC ONCOLOGY, TULANE

Dr. Jessica Shank is board certified in Gynecologic Oncology and Obstetrics & Gynecology and specializes in female pelvic cancers including ovarian, fallopian tube, primary peritoneal, uterine, cervical, vaginal and vulvar cancers. She performs radical surgery utilizing the latest minimally invasive techniques to include robotic, laparoscopic and laser surgery. She also specializes in cancer survivorship including physical and psychosocial aspects of life after surviving cancer (including sexual function and management of menopausal symptoms). She has presented her medical research at national and international meetings and has published multiple peer-reviewed articles in the field of Gynecologic Oncology and Obstetrics & Gynecology.

Dr. Shank is a native of Louisiana and received her undergraduate degree in Art and Biology at Tulane and her medical degree at Tulane University School of Medicine. Prior to starting medical school Dr. Shank was awarded the Navy Health Professions Scholarship and was commissioned a Naval Officer. After medical school, Dr. Shank completed Internship and Residency in Obstetrics & Gynecology at Naval Medical Center San Diego followed by a fellowship in Gynecologic Oncology at the University of Michigan. After completing her fellowship, Dr. Shank served as a staff Gynecologic Oncologist at Naval Medical Center San Diego for 5 years and was the Division Director of Gynecologic Oncology.

QIUYANG ZHANG, PhD

ASSISTANT PROFESSOR OF STRUCTURAL & CELLULAR BIOLOGY, TULANE

Dr. Zhang received a bachelor degree in biology from Shaanxi Normal University, China in 1987. She was appointed assistant professor at Shaanxi University of Chinese Medicine in 1987 and was promoted to lecturer in 1994 and associate professor in 2002. Dr. Zhang received a Master of Science degree in 2001 and a PhD degree in 2004 from Xi'an Jiaotong University School of Medicine and then joined the faculty there as an associate professor in the Department of Anatomy and Histology and Embryology. In 2005, she started her postdoctoral training in molecular biology at Eastern New Mexico University and then in cancer genetics at Loyola University in Chicago. In 2006, Dr. Zhang joined George Washington University as a research scientist in the Department of Biochemistry and Molecular Biology. In 2009, she joined Tulane University School of Medicine as a postdoctoral fellow in molecular cancer biology in the Department of Structural & Cellular Biology. She was promoted to be an instructor in 2014 and assistant professor in 2018. Dr. Zhang's research interests include reproductive biology, cancer biology, and inflamm-aging.

DR. PERRY RIGBY, FORMER LSU HEALTH CHANCELLOR, PASSES AWAY AT 85

Following a brief illness, Perry Gardner Rigby, MD, who led LSU Medical Center New Orleans and Shreveport campuses as Chancellor from 1985-94, passed away peacefully at his home on Thursday, May 10, 2018, at the age of 85.

After stepping down as Chancellor, Dr. Rigby served as Director of Health Care Systems and Professor of Medicine at LSU Health New Orleans School of Medicine. He taught and mentored students, residents and fellows until his death.

He was also Chairman of the State of Louisiana's Medical Education Commission and an LCRC faculty member and was considered to be a national expert in medical education, graduate medical education, physician demand and supply, and academic health centers, during the turbulence of health care reform and beyond.

A native of East Liverpool, Ohio, Dr. Rigby served as Dean of University of Nebraska's School of Medicine before being recruited to LSU School of Medicine in Shreveport.

Dr. Rigby was a diplomat of the American Board of Internal Medicine, a Fellow of the American College of Physicians, a longstanding member of the American Federation of Clinical Research, a Fellow of the Royal Society of Medicine and a member of the American Medical Association for the Advancement of Science and the Southern Society of Clinical Investigation. He was inducted into Sigma Xi and Alpha Omega Alpha. He authored and co-authored nearly 200 articles and abstracts.

THE LOUISIANA CAMPAIGN FOR TOBACCO-FREE LIVING (TFL)

GOAL 1
PREVENT INITIATION AMONG YOUTH AND YOUNG ADULTS

GOAL 2
ELIMINATE EXPOSURE TO SECONDHAND SMOKE

GOAL 3
PROMOTE CESSATION RESOURCES

GOAL 4
ELIMINATE TOBACCO-RELATED HEALTH DISPARITIES

TFL GOAL 1
PREVENT INITIATION AMONG YOUTH AND YOUNG ADULTS

This year proved to be significant for the youth's campaign against tobacco.

Nationally, the FDA looked to take steps toward stopping the sale of most flavored e-cigarettes to individuals under the age of 18 and proposed vigorous age verification requirements for anyone buying e-cigarettes online.

Locally, Next Era (a statewide youth movement of the Louisiana Campaign for Tobacco-Free Living) has been actively making strides in empowering high school teens to work toward meaningful tobacco-free changes in their communities.

IN 2018 NEXT ERA:

- Consisted of 170 students
- Had 10 chapters
- Gathered 1,179 message cards advocating for a tobacco-free Louisiana from the community

2018 PARTICIPATING SCHOOLS AND ORGANIZATIONS

REGION 3

LEADERS OF OUR COMMUNITY

WEST ST. MARY

REGION 4

WESTGATE HIGH SCHOOL

REGION 5

NORTHSIDE CHRISTIAN HIGH SCHOOL

IOWA HIGH SCHOOL

REGION 6

ATLANTA HIGH SCHOOL

DODSON HIGH SCHOOL

WINNFIELD HIGH SCHOOL

REGION 8

RICHWOOD HIGH SCHOOL

BASTROP HIGH SCHOOL

REGION 9

ST. HELENA COLLEGE AND CAREER ACADEMY

KICK BUTTS DAY

On March 21 Next Era youth promoted healthy, tobacco-free lifestyles with a rally at the Capitol Park Welcome Center as part of National Kick Butts Day. In keeping with the day's mission to empower youth to stand up, speak up and seize control against tobacco use, the teens let legislators know they believed that now is the time to create clean air for all.

NEXT ERA ALLOWS US – THE STUDENTS – TO MAKE HEALTHIER AIR FOR ALL FUN AND ENJOYABLE. I THINK IT'S A GREAT IDEA FOR TEENS TO GET OUT, HELP OUT OUR COMMUNITY, AND JUST GIVE BACK. WE WANT EVERYONE TO STAY HEALTHY, NOT JUST OUR OWN FAMILIES. SO COME JOIN US AND HELP US GET SMOKE- FREE ENVIRONMENT FOR EVERYONE, INCLUDING YOU!

– Chelaja, Woodlawn High School

PERSONALLY, MY MOM AND BROTHER BOTH SMOKE IN THE HOUSE AND IT CAUSES ME SHORTNESS OF BREATH AND MAKES IT HARD TO BREATHE SOMETIMES. I'M TRYING TO MAKE INDOOR PLACES SMOKE-FREE IS BECAUSE NO ONE SHOULD HAVE TO BREATHE IN SECONDHAND SMOKE – I DON'T LIKE HOW IT AFFECTS MY FRIENDS, FAMILY, AND COMMUNITY BECAUSE EVERYONE CAN GET CANCER FROM IT.

-Brela, Dodson High School

TFL GOAL 2
ELIMINATE EXPOSURE TO SECONDHAND SMOKE

To date the Louisiana Tobacco-Free Living (TFL) campaign has encouraged 18 towns and cities across Louisiana to stand up for its citizens and take a stand against second-hand smoke.

In 2018 Baton Rouge, McNary, Abbeville, Roseland, Abbeville, and Haynesville passed comprehensive indoor smoke-free policies, helping create healthier air for its residents. The actions of these cities helped increase the total percentage of Louisiana protected from secondhand smoke to 21.46% (a 5 percent increase from 2017), which equates to 1,00,868 Louisiana residents. TFL regional managers and community coalitions have worked to educate residents, community organizations and local leaders about the benefits of smoke-free air.

Additional TFL 2018 highlights include the recognition of Baton Rouge's six-month smoke-free milestone and the anniversary of Lafayette's decision to go smoke-free.

We made significant progress this year, but there is much work left to do. TFL regional managers and the TFL team continue to educate Louisiana about the dangers of secondhand smoke and promote healthier air for all.

TFL GOAL 3
PROMOTE CESSATION RESOURCES

In 2018, a total of **4,985 registered tobacco users** received services from the Louisiana Tobacco Quitline (1-800-Quit-Now). Quitline services offers approved pharmacotherapies along with phone counseling, web-based coaching, or an integration of both conducted by a certified Tobacco Treatment specialist. Of the total participants serviced, **3,050 (61.2%)** were eligible and enrolled into the Smoking Cessation Trust services.

QUITLINE DEMOGRAPHICS

The following breakdown illustrates the demographics of Louisiana residents seeking to quit tobacco:

- Female 67%; Male 33%
- African American/Black 35%; White 48%
- High School degree 25%; Some College 18%; College 12%
- Age Range: Age 51-60 28%; Age 41-50 17%; Age 61-70 17%; Age 31-40 16%

- How the Caller Heard About Quitline Services: TV/Commercial 42%; Healthcare Provider 13%; Family/Friend 10%

TFL GOAL 4
ELIMINATE TOBACCO-RELATED HEALTH DISPARITIES

Following the success of the African American male cessation initiative in New Orleans, Baton Rouge, Monroe and Opelousas, the program has extended to Shreveport. TFL's partnership with Communities of Color has been instrumental in the grassroots component of this initiative. Due to this partnership, we have been able to reach African American males at barbershops, churches, community-based organizations and at events throughout the local community. In addition to the grassroots campaign, a variety of media was utilized to reinforce the benefits of quitting tobacco. These media include paid radio advertisements and social media promotion, which saw significant engagement metrics.

TFL recognizes the importance and challenges of reaching disparate populations, such as African American males and is dedicated to seeking methods to overcome these challenges to increase the health of all Louisiana residents through tobacco cessation.

LOUISIANA CANCER RESEARCH CENTER

STATEMENT OF FINANCIAL POSITION

June 30, 2018 (with comparative financial information as of June 30, 2017)

ASSETS

	2018	2017
Cash	16,576,059	18,373,404
Investments	12,243,442	9,413,222
Receivables—Grants	3,460,611	3,063,427
Receivables—Other	756,636	703,927
Property and Equipment	91,807,920	94,695,610
Prepaid Expenses	64,456	69,170
Deposits	52,400	52,400
TOTAL ASSETS	**124,961,524**	**126,371,160**

LIABILITIES AND NET ASSETS

LIABILITIES	2018	2017
Accounts Payable	3,686,832	4,808,532
Retainage Payable	-	661,396
Accrued Liabilities	87,359	76,359
TOTAL LIABILITIES	**3,774,191**	**5,546,287**

NET ASSETS	2018	2017
Unrestricted	3,417,615	5,838,422
Temporarily Restricted	117,769,718	114,986,451
TOTAL NET ASSETS	**121,187,333**	**120,824,873**
TOTAL LIABILITIES AND NET ASSETS	**124,961,524**	**126,371,160**

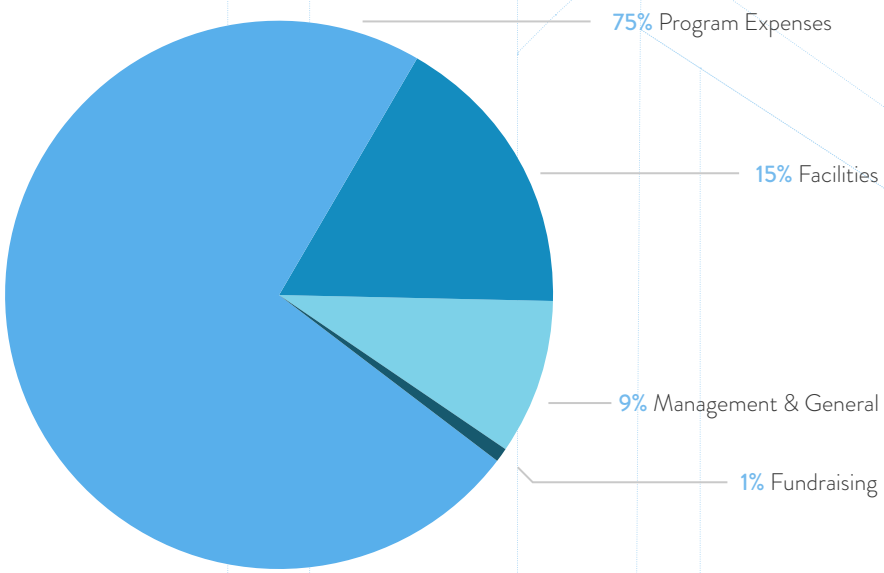
LOUISIANA CANCER RESEARCH CENTER

STATEMENT OF ACTIVITIES

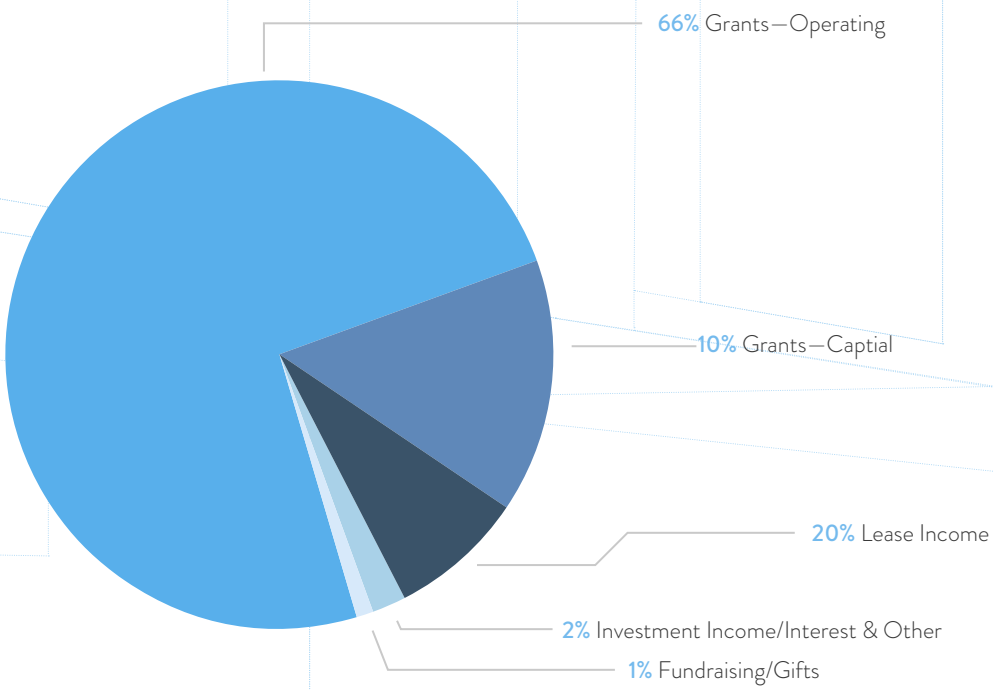
Year ended June 30, 2018 (with summarized financial information for the year ended June 30, 2017)

REVENUES	UNRESTRICTED	TEMPORARILY RESTRICTED	2018 TOTAL	2017 TOTAL
Grants		14,231,791	14,231,791	15,573,235
Lease Income	3,680,056		3,680,056	1,356,764
Investment Income/Interest	12,072	220,192	232,264	248,707
Other	205,306		205,306	38,840
Fund-raising & Contributions	202,949		202,949	199,301
Net Assets Released from Restrictions	16,518,945	(16,518,945)	—	—
TOTAL REVENUES	**20,619,328**	**(2,066,962)**	**18,552,366**	**17,416,847**
EXPENSES				
Research Expenses	5,201,129		5,201,129	5,753,012
Cessation Expenses	4,693,560		4,693,560	5,807,753
Louisiana Cancer Strategy	363,218		363,218	
Salaries and Related Benefits	788,231		788,231	892,701
Operating Services	2,986,916		2,986,916	3,107,094
Supplies	26,496		26,496	47,117
Professional Services	371,895		371,895	436,359
Travel & Meeting Expenses	1,132		1,132	5,893
Depreciation	3,623,337		3,623,337	3,006,618
Fund-raising Expenses	96,786		96,786	148,189
Other	37,206		37,206	3,446
TOTAL EXPENSES	**18,189,906**		**18,189,906**	**19,208,182**
INCREASE(DECREASE) IN NET ASSETS	**2,429,422**	**(2,066,962)**	**362,460**	**(1,791,335)**
NET ASSETS, BEGINNING OF YEAR	988,193	119,836,680	120,824,873	122,616,208
NET ASSETS, END OF YEAR	**3,417,615**	**117,769,718**	**121,187,333**	**120,824,873**

OPERATING EXPENSES 2018



FUNDING SOURCES 2018



THE LOUISIANA CANCER RESEARCH CENTER EXISTS TO SERVE THE PEOPLE OF LOUISIANA.

OUR JOB IS SIMPLE: TO BUILD A HEALTHIER COMMUNITY BY CREATING MORE PERSONAL VICTORIES IN THE FIGHT AGAINST CANCER— AND THE TACTICTS THAT TREAT AND PREVENT IT.

2018 BY THE NUMBERS

343

PUBLICATIONS RELEASED

23.6

MILLION DOLLARS IN CANCER-RELATED NIH FUNDING

1,071

NEW CLINICAL TRIAL PATIENTS