

THE SIDNEY KIMMEL COMPREHENSIVE  
CANCER CENTER AT JOHNS HOPKINS

# KIMMEL IN THE COMMUNITY



PILLARS OF  
PROGRESS

# Closing the Gap in Cancer Disparities

MUCH PROGRESS HAS been made in Maryland toward eliminating cancer disparities, and I am very proud of the role the Johns Hopkins Kimmel Cancer Center has played in this progress.

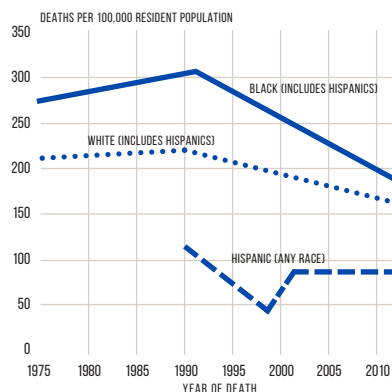
Overcoming cultural and institutional barriers and increasing minority participation in clinical trials is a priority at the Kimmel Cancer Center. Programs like our Center to Reduce Cancer Disparities, Office of Community Cancer Research, the Maryland Cigarette Restitution Fund at Johns Hopkins, and Day at the Market are helping us obtain this goal.

The challenge before Maryland is greater than most states. Thirty percent of Maryland's citizens are African-American, compared to a national average of 13 percent. We view our state's demographics as an opportunity to advance the understanding of factors that cause disparities, unravel the science that may also play a contributory role, and become the model for the rest of the country. Our experts are setting the standards for removing barriers and improving cancer care for African-Americans and other minorities in Maryland and around the world.

Although disparities still exist in Maryland, we continue to close that gap. Overall cancer death rates have declined in our state, and we have narrowed the gap in cancer death disparities between African-American and white Marylanders by more than 60 percent since 2001, far exceeding national progress. We are committed to closing the gap, and it will remain a focus for us in the laboratory and in the clinic until cancer disparities no longer exist.

## Historical Trends (1975-2012)

Mortality, Maryland  
All Cancer Sites, Both Sexes, All Ages



William G. Nelson, M.D., Ph.D.  
Marion I. Knott Professor and Director  
The Sidney Kimmel Comprehensive  
Cancer Center at Johns Hopkins





# Improving Minority Participation in Clinical Trials

## PILLAR OF PROGRESS

The number of minority patients from Maryland treated at the Kimmel Cancer Center has increased from 985 in 2010 to 1,231 in 2015.



Dina Lansey,  
Assistant Director  
for Diversity  
and Inclusion in  
Clinical Research

DINA LANSEY heads the Kimmel Cancer Center's initiative to increase minority participation in clinical trials. She directs efforts to increase clinical trials awareness and to improve communication, continuity of care, and support for patients participating in clinical trials. Lansey, a seasoned expert in addressing racial disparities in cancer, is making cancer clinical trials more available to minority patients. She is developing ways to better measure and understand why many African-Americans, women, elderly, people with low income, and Baltimore City residents diagnosed with cancer often choose not to participate in clinical trials. It will help her remove barriers that prevent or discourage minorities from enrolling in clinical trials.

The transportation pilot study is one example. Lansey used patient data to identify cost and convenience of transportation to a doctor or clinic appointment as a barrier to clinical trial participation.

Now, she has started a pilot study to see if addressing transportation needs helps with trial participation. Her study provides free parking to patients

participating in therapeutic clinical trials and the choice of free parking or taxi transportation to Baltimore City residents. Lansey's goal is to eliminate access to transportation or the means to pay for it as a roadblock to receiving innovative new treatments. "This is an example of how we use data and feedback from our patients and research staff to make clinical trials accessible to all of our patients," she says. She is also studying whether support from a patient navigator may increase clinical trial participation.

To help spread the word, Lansey is engaged in a clinical trials awareness campaign that includes an educational brochure and video that provides information to help patients and families understand the value of considering clinical trials as a treatment option. It also details the services provided to support patients participating in clinical trials.

These efforts appear to be paying off. The number of minority patients from Maryland treated at the Kimmel Cancer Center increased from 985 in 2010 to 1,231 in 2015. Last year, 22 percent of Kimmel Cancer Center patients were African-American, and just over 20 percent participated in clinical trials.



## Stronger Than **Colon Cancer**

TRINA TAYLOR ISAAC has felt God's guidance throughout her journey with colorectal cancer. She had been out of work for over a year before she was hired at The Johns Hopkins Hospital in 2008, an opportunity that was an answer to her prayers and more.

Isaac remembers feeling sluggish. Already thin, she was losing more weight and didn't know why. She had some mild GI symptoms, and the combination caused her to go to Johns Hopkins Occupational Health Services, which directs employees to experts who can advise them on health-related issues.

Occupational health got the medical tests rolling, including a colonoscopy. Isaac learned she had advanced colon cancer.

"I prayed. I cried, and then I made up my mind that I was going to beat it," says Isaac. "I have cancer, but cancer doesn't have me. I refused to let it control me."

She had surgery to remove a large portion of her colon and began chemotherapy. Her colleagues at Johns Hopkins rallied around her. "I told my staff if I come to work wearing stilettos, that's a sign that it is a good day. If I'm wearing flats, you will know I'm having a tough time," she says. They coined the phrase "strength in stilettos" to honor Isaac's courage and perseverance. "They made me want to come to work," she says.

Isaac's cancer continued to grow, and it persisted even with more chemotherapy and the addition of radiation therapy. In 2013, she had a permanent colostomy to surgically remove more of her cancerous colon.

Isaac remains strong and continues to look to clinical trials—research studies of promising new treatments—to gain an edge on her cancer.

"This journey isn't easy," she says. Isaac has a young son and can't help but worry about not being here for him. She focuses on enjoying each moment with him and bringing hope and information to others battling cancer. She lives her life by her self-proclaimed motto #MMOP—make memories on purpose.

She makes sure her voice is heard. She is a member of a Johns Hopkins patient advisory council, the Hope Project, encouraging other Kimmel Cancer Center patients. She is also an Osti Beauty—one of four African-American women who stepped out of their comfort zone to put a public face to colorectal cancer and offer support to women who have or need colostomies.

"I wanted to go out into the community to talk about my experience," she says. "People don't talk about it."

Isaac has chronicled her journey on Facebook, and the stunning survivor caught the attention of a fashion designer. Now, Isaac can add runway model to her list of accomplishments. More importantly, however, she hopes to be a role model—for her son and for everyone battling cancer.



Ellen Lilly-Foreman (Left)  
with Trina Taylor Isaac

## Taking on Prostate Cancer



Mona and Gary Steele

GARY STEELE has faced adversity before. The 69-year-old retired Army colonel is a graduate of the U.S. Military Academy at West Point. As a cadet in 1966, he was the first African-American to play varsity football at West Point.

Five years ago, he took on a new battle—prostate cancer. Since his diagnosis, he has made it a mission to inform other African-American men about their increased risk of prostate cancer and the importance of screening. “I didn’t know I was at higher risk, but now I do, and I want to make as many people as possible aware.” Steele’s two sons and his son-in-law are among those he has told. They have been screened and are now also helping to spread the word.

Despite early diagnosis, robotic surgery to remove his prostate and radiation therapy, Steele’s prostate cancer returned, and even worse, it had spread. The doctors who had been treating him had no other options to offer. That’s when Steele turned to the Johns Hopkins Kimmel Cancer Center. It was the first time anyone discussed clinical trials—research studies of promising new treatments.

Since coming to the Kimmel Cancer Center, he has participated in two trials. The first therapy didn’t help his prostate cancer, so his medical team offered him

another option. In June 2015, he began the second clinical trial—one that compares standard hormonal therapy to increased doses of hormonal therapy.

Steele says he feels very emotionally connected to his Kimmel Cancer Center team. “I believe in the people I have met at Johns Hopkins. I trust them and have faith that they care about me and are trying to do the best for me. They are not doing something that is just about research,” says Steele.

He is honest about his reason for choosing a clinical trial. “I wanted to slow the growth of my cancer and get the best treatment I could for myself,” he says. “If they learn something from this study that could one day help someone else, that would be wonderful, but my main goal was get to get my cancer under control.”

Steele’s prostate-specific antigen (PSA) level has steadily declined, and it is now undetectable, an indicator that the treatment he received in the second clinical trial is working.

“When I tell people about my prostate cancer, they ask me where I’m going for treatment. I tell them, ‘Johns Hopkins,’ and they all say the same thing: ‘They are the best.’” Steele agrees. “I pray that my sons will never have an issue, but if they do, they are going to Johns Hopkins,” he says.

**WEB EXCLUSIVE:** WATCH “GARY STEELE’S LASTING IMPACT,” HIS STORY OF BREAKING THE COLOR BARRIER AT WEST POINT: [espn.go.com/video/clip?id=10471226](https://espn.go.com/video/clip?id=10471226)



## Prostate Cancer Hits African-American Men Younger and Harder

KIMMEL CANCER Center prostate cancer experts know that African-American men, particularly those with a family history of prostate cancer, are at higher risk for the cancer, tend to get it at an earlier age and often have a more aggressive form of the disease. They are using precision medicine techniques that take genetic characteristics of tumors into consideration to specifically tailor monitoring and treatment recommendations to African-American men.



Recent research by prostate cancer expert and surgeon Ted Schaeffer found that African-American men who have surgery have a higher likelihood of needing additional treatment after surgery. He also revealed that African-American men have lower levels of the screening marker prostate-specific antigen (PSA), and often have more aggressive and advanced prostate cancers than the test indicates.

Detection is also a challenge. Schaeffer says that African-American men tend to develop anterior tumors at the top of the prostate, an area that's harder to

sample with a standard biopsy. As a result, all high-risk and African-American patients at Johns Hopkins get an MRI-guided biopsy.

"We have world expertise in treating high-grade, high-risk prostate cancer and also very rare forms of prostate cancer, like prostate sarcomas," says Schaeffer. "The bottom line is if a man has aggressive, high-risk cancer, we can really go after it with multimodal treatment, and we can still get a cure."

Other clinical studies are building upon Kimmel Cancer Center research and should also benefit at-risk minority populations. Work by Elizabeth Platz found that cholesterol-lowering drugs called statins decrease the risk of developing aggressive prostate cancer. Platz and others are now working to identify or develop statinlike drugs that may be used to safely prevent prostate cancer from advancing to a lethal stage.

Cancer prevention and control expert Corrine Joshu is collaborating with Platz on another prevention study. She found that smokers had twice the risk of prostate can-

### PILLAR OF PROGRESS

Prostate cancer death rates among African-Americans have declined by nearly 20 percent, and race disparities in death rates have also narrowed by 20 percent.

cer recurrence following surgery as former smokers and nonsmokers. Joshu also identified a link between weight gain of 5 or more pounds after surgery and a doubled risk of cancer recurrence when compared to men who maintained their weight.

Prostate cancer and chemical therapeutics expert Michael Carducci is studying the benefits of natural products, including pomegranate and muscadine grape extracts, in controlling prostate cancer progression. Pomegranate has the highest level of antioxidants—chemicals known to have cancer-fighting properties. Carducci is collaborating with colleagues at Howard University for a similar study of muscadine grapes. The skin of the grapes contains the same antioxidant found in pomegranates. With further study, the scientists are hopeful that these fruit extracts could be used as a natural treatment for men with rising PSA levels, an indicator of prostate cancer development and recurrence.

"Our studies have shown that the extracts, even at low doses, slow the rise of PSA. We think this is a good thing, but we still have to prove that it makes a difference in patient outcomes," says Carducci.

These studies provide opportunities for community outreach and potentially inexpensive, risk-free remedies to stave off prostate cancer recurrence.

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CANCER CENTER AT JOHNS HOPKINS

# THE STATE OF CANCER IN MARYLAND

*Making Progress Through Research*

KIMMEL IN THE COMMUNITY

STATEWIDE

WESTERN MARYLAND

SOUTHERN MARYLAND

CENTRAL MARYLAND  
(INCLUDES BALTIMORE CITY)

EASTERN SHORE



# THE STATE OF CANCER IN MARYLAND

Making Progress Through Research



## KIMMEL IN THE COMMUNITY

- Maryland's cancer death rate—once the second highest in the nation—is now 31st in the nation.
- Cancer death rates in Maryland are below the national cancer death rate and are declining among all citizens.
- Maryland's cancer death rates are falling more rapidly than the national average.
- Cancer death disparities between black and white Marylanders have narrowed by more than 60 percent since 2001.
- Cancer incidence rates in Maryland are in line with the national average.
- Cancer death rates among blacks in Maryland are lower than the national average (21.6/100,000 versus 28.9/100,000), and are significantly lower than adjoining states (37.4/100,000) and the six states with the lowest cancer death rates in the nation (35.5/100,000).
- The rate of decline in incidence and death for colorectal cancer exceeds the national average.
- Lung, prostate, breast, cervical, and oral cancer and melanoma death rates are decreasing.
- Risk factors for cancer—obesity, chronic alcohol use, tobacco use, and low physical activity—have a statewide prevalence below the national average.
- The U.S. Centers for Disease Control and Prevention reports that Maryland excels in cancer screening.
- Maryland smoking rates for adults and youth are below the national average.
- Johns Hopkins clinicians and scientists have been health resources for Maryland's elected officials and have supported anti-smoking and clean air legislation.





## WESTERN MARYLAND

- Smoking-related cancers
- Carcinogens in drinking water
- Cancer risk from arsenic exposure
- Youth smoking cessation
- Established tissue repository



## STATEWIDE

- Carcinogens in Maryland's air, water, and soil
- Smoking-related cancer detection and prevention
- Breast cancer gene pathways
- New cancer drug discoveries
- Analysis of genetic risk for colon cancer
- GIS survey of environmental risks for colon cancer
- Inflammation and cancer risk
- Core resource for cancer biomarker discovery
- Overcoming breast cancer treatment resistance
- Familial and early markers of pancreatic cancer
- Cholesterol-lowering drugs for prostate cancer prevention
- Reduction of tobacco disparities
- Cancer screening for inpatients
- Electronic cigarette risks
- Personalized cancer screening
- Weight control and cancer risk reduction
- Diabetes and cancer death disparities
- Access to data and cancer research
- Measuring cancer risk
- Triple-negative breast cancer genetic causes
- Smoking and pancreatic cancer
- Epigenetic therapies
- Immune therapies
- Patient navigation
- Connecting care to outcome
- Environment, inflammation and prostate cancer
- Age and cancer



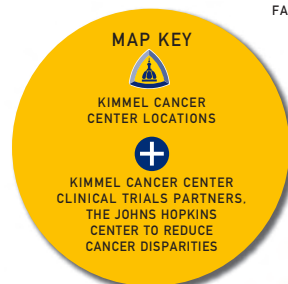
JOHNS HOPKINS  
SUBURBAN  
HOSPITAL



JOHNS HOPKINS  
SIBLEY MEMORIAL  
HOSPITAL



INOVA  
FALLS CHURCH, VIRGINIA



### MAP KEY



KIMMEL CANCER  
CENTER LOCATIONS



KIMMEL CANCER CENTER  
CLINICAL TRIALS PARTNERS.  
THE JOHNS HOPKINS  
CENTER TO REDUCE  
CANCER DISPARITIES



READING HOSPITAL  
READING, PENNSYLVANIA

JOHNS HOPKINS  
GREEN SPRING STATION

GBMC

THE JOHNS HOPKINS  
HOSPITAL

JOHNS HOPKINS  
PROHEALTH

JOHNS HOPKINS  
BAYVIEW MEDICAL  
CENTER

### CENTRAL MARYLAND (INCLUDES BALTIMORE CITY)

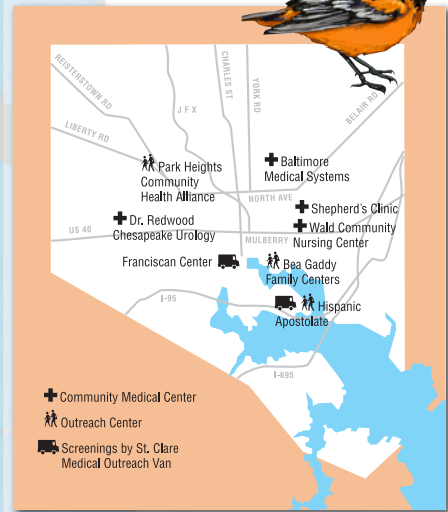
- Oral cancer screening
- Faith-based cancer prevention and control
- Youth smoking cessation
- Lung cancer risk factors for women
- Biomarkers for colon cancer
- Racial/ethnic differences in prostate cancer
- Cancer prevention in African-Americans
- Cervical cancer prevention in minorities

- Cadmium exposure and prostate cancer risk
- Genetics of lung cancer
- Urban disparity cancer reduction
- HPV infection and oral cancer
- Cervical cancer vaccine
- Environmental exposures to carcinogens
- Racial disparities and cervical cancer
- Waterway contamination and cancer risk

- Prostate, breast and colon cancer screening
- Prostate cancer biomarkers in African-Americans
- Biospecimen bank for targeting racial disparities
- Cancer education and outreach at Northeast Market
- Traffic-related air pollution exposures
- Cancer prevention in African-American young adults

### SOUTHERN MARYLAND (includes suburban D.C. area):

- Racial/ethnic variations in prostate cancer
- Cancer biomarkers and prevention
- Cancer risk from arsenic exposure



PENINSULA REGIONAL  
MEDICAL CENTER

### EASTERN SHORE

- Carcinogens in drinking water
- Cancer risk from arsenic exposure
- Youth smoking cessation





## Kimmel in the Community

### Our Partners in Care

*Day at the Market:* This award-winning program is held twice a month at Northeast Market in East Baltimore. It brings nurses and other clinicians, safety experts, and other caregivers face to face with citizens to offer tips on cancer prevention, detection, and healthy living. One day a month focuses entirely on cancer education, prevention, and screening. Information on clinical trials is provided as well as assistance in obtaining health insurance through the Affordable Care Act. The program received recognition from the Maryland Department of Health and Mental Hygiene and an award from the Maryland Cancer Collaborative, the group that oversees the Maryland Comprehensive Cancer Control Plan.



*Community Advisory Group:* The Kimmel Cancer Center is working to transform cancer care by making it more patient- and family-centered. Our Community Advisory Group is part of the Johns Hopkins Center to Reduce Cancer Disparities. It forges new bonds with the people of Baltimore and Prince George's County and the community organizations that support its neighborhoods. The advisory group offers critical input and perspective to guide our experts as we provide community-based participatory education and research among minority and underserved populations in Maryland. The advisory group ensures our outreach activities and communication, written materials, and clinical trials information are planned and structured in a way that will inform, engage, and benefit minority citizens, particularly in African-American communities. The COACH (Evaluating Coaches of Older Adults for Cancer Care and Healthy Behaviors) study is an example of a clinical trial organized with the help of the advisory group. COACH evaluates the benefit of using trained, patient-selected health "coaches" versus professional health care navigators to encourage completion of cancer screenings.



*Better Delivery of Care:* Johns Hopkins voluntarily joined programs like Priority Partners, a managed care organization that provides health care to more than 185,000 uninsured members. The program was established long before the Affordable Care Act, says William Nelson, Kimmel Cancer Center director. "This is not basic health care. This is care that is equal to and, in many cases, exceeds that offered through premier commercial insurance plans," says Nelson.

*Community Physicians:* Johns Hopkins Community Physicians provides care to nearly a half-million Marylanders in neighborhood locations. It continues to meet the needs of Maryland's underserved by providing screening for prostate, colon, breast, and cervical cancers.





*Colon Cancer Screening:* Targeted efforts by the Kimmel Cancer Center helped markedly reduce colon cancer death rates and address disparities. For example, faculty members from the Johns Hopkins gastrointestinal program collaborated with the Baltimore City Health Department to provide colonoscopy screening to more than 200 uninsured Baltimore residents. These efforts were effective. Maryland now has the highest rate of decrease of colorectal cancer in the U.S., and racial disparities for colorectal cancer have been eliminated.

*Creating Networks:* Our National Outreach Network, a collaborative program with the National Cancer Institute, provides outreach and education to underserved Maryland communities.

*Helping our D.C. Neighbors:* Just 25 years ago, Maryland and Washington, D.C., had the highest cancer death rates in the nation. Through targeted efforts to address causes and disparities, Maryland now ranks 31st in the nation, but Washington, D.C., rates remain largely unchanged.

Washington has the highest rates in the nation for prostate cancer and among the highest rates for breast cancer and cervical cancers. Two initiatives in the capital region are aimed at changing that trend. A 15-year partnership with Howard University is focused on developing research-based strategies to eliminate racial disparities in cancer death rates in Maryland and Washington. In another partnership with Howard University, Sibley Memorial Hospital, a member of Johns Hopkins Medicine, and United Medical Center (UMC) are bringing much-needed cancer screening, detection and treatment to the medically underserved and largely African-American neighborhoods of Ward 7 and Ward 8. The program brings Johns Hopkins/Sibley experts to UMC to provide care, but it also provides free transportation to Sibley for services that cannot be provided at UMC.



*Getting the Word Out:* The Kimmel Cancer Center provides expert speakers and offers free cancer education to community organizations, businesses, churches, and other groups. To schedule a speaker to discuss health disparities in cancer research and care and other timely topics, call 410-955-8800.

*CUPID (Cancer in the Underprivileged Indigent or Disadvantaged):* CUPID is a unique, laboratory-based summer fellowship program at the Johns Hopkins University School of Medicine. The mission of CUPID is to promote the specialty of oncology to medical students interested in caring for the underserved. The CUPID program is a seven-week summer fellowship, which includes laboratory-based research; lecture series covering topics from basic oncology to specific cancers to health care disparities; clinician shadowing in medical, surgical and radiation oncology clinics; and a visit to the National Cancer Institute to meet researchers addressing health care disparities on a national level. This year, the Kimmel Cancer Center received 231 applications from 115 colleges



# Cancer and **Racial Disparities**

AFRICAN-AMERICANS have lower survival from cancer than their white counterparts. Some of this disparity is attributable to socioeconomics and stage of cancer diagnosis, but diabetes and obesity expert Jessica Yeh is exploring a link between diabetes management and cancer.

Although it is widely understood that African-Americans have a higher prevalence of diabetes, Yeh is among the first to look for possible connections to racial differences in cancer survival rates. Yeh believes that pre-existing diabetes and poor control of it may have a negative impact on cancer survival. She has undertaken a major data search—scouring a large federal database and data collected at the Kimmel Cancer Center—to quantify the long-term risk of pre-existing diabetes and racial disparity in colon, breast and uterine cancer survival, and to decipher any links to increased treatment side effects, such as infection.

Yeh is conducting a clinical study in partnership with the state of Maryland to see if improved management of diabetes can reduce racial disparity in cancer



survival. The SPIRIT (Survivorship Promotion in Reducing IGF-1) study is the first Johns Hopkins clinical study to take place entirely in the community, taking our expertise and trials to the public. Yeh is researching the benefits of the diabetes drug metformin, which lowers a hormone called insulin growth factor, or IGF-1, for its potential to increase cancer survival in African-American cancer patients who also have diabetes. The study compares the benefits of metformin to self-directed weight loss or weight loss with support of a counselor in reducing

## PILLAR OF PROGRESS

The SPIRIT study is one of the unique Kimmel Cancer Center trials in the Community. We are going to the Community. They don't have to come to us.

diabetes-related IGF-1. Yeh is working with colleagues at Johns Hopkins overseeing the POWER (Practice-Based Opportunities for Weight Reduction) trial in the nonmetformin arms of the trial. POWER is a collaborative study with participants from six primary care practices in the Baltimore area.

Cancer prevention and breast cancer expert Kala Visvanathan is studying weight gain in breast cancer survivors. Data from earlier studies suggest that breast cancer survivors who gain weight may have a higher risk of having their cancer return. In a Kimmel Cancer Center study, Visvanathan found that survivors with a family history of the disease, including those who carry cancer-related BRCA1 and BRCA2 gene mutations, gained more weight over the course of four years than cancer-free women—especially if they were treated with chemotherapy. In the four-year span, survivors gained significantly



more weight—3.6 pounds on average—than cancer-free women. Among 180 survivors diagnosed with cancer during the last five years of the study period, 37 (21 percent) gained at least 11 pounds over a four-year period compared with 35 of 307 (11 percent) of their cancer-free peers. The weight change findings remained the same after accounting for other factors associated with weight gain, such as increasing age, transition to menopause and level of physical activity, the researchers say.

WEB EXCLUSIVE: LEARN MORE ABOUT THE SPIRIT STUDY AT: <http://bit.ly/SpiritStudy>, [SPIRIT@jhmi.edu](mailto:SPIRIT@jhmi.edu) or 410-281-1600





“I think often about the people who conducted and supported the research that made this treatment possible for my son. They gave us the greatest gift our family could ever receive. It saved Nicholas. When I think about that, it is the most humbling thing.”

—*Caroline Laguerre-Brown*,  
Nicholas’ mother and  
Chief Diversity Officer for  
The Johns Hopkins University

#### Science Conquers One Disparity

Nicholas was cured through a new kind of bone marrow transplant pioneered at the Kimmel Cancer Center. It is called a haploidentical transplant, and it makes it possible for African-American and minority patients, who often are under-represented in national registries, to receive a bone marrow transplant. Read more at <http://bit.ly/ScienceConquersOneDisparity>



## A Campaign to Prevent Cervical Cancer

THE JOHNS HOPKINS CENTER to Reduce Cancer Disparities has launched a prevention campaign to eliminate cervical cancer incidence and death disparities in Baltimore City and Prince Georges County with HPV vaccination. The study, led by cancer prevention and control expert Norma Kanarek, initially focuses on African-American preteens and teens in these two Maryland locations, but if it is successful, it could then be rolled out throughout the state. HPV is the cause of almost all cervical cancers, and it is also linked to certain oral cancers. By using community outreach and health fairs, face-to-face meetings, and mailings to spread the word to parents and grandparents about the benefit of HPV vaccination for children in their care, the center hopes to increase vaccine participation from its current rate of 25 percent to 80 percent by 2020. Cervical cancer is among the most preventable and curable cancers. “No one ever needs to die from cervical cancer,” says Kanarek. “It’s our goal to make that a reality in Maryland.”

Laboratory research out of the Kimmel Cancer Center may help expand this goal, providing an innovative screening test that can detect three women’s cancers not currently eliminated through prevention. The test, called PapGene, is based on the Pap test, which has been routinely performed since the 1950s to detect and prevent cervical cancer. PapGene uses the same cervical fluid collected during a Pap test to capture DNA that is shed from cancer cells; specifically, alterations the researchers have determined lead to endometrial and ovarian cancer development. There are currently no early screening tests for endometrial and ovarian cancers, and the new test could one day make it possible to test for three female cancers at a woman’s annual wellness exam.

In early, small-scale studies of PapGene, the test detected 100 percent of endometrial cancers and 40 percent of ovarian cancers. The scientists are working to improve PapGene’s sensitivity to ovarian cancer, but even at 40 percent, it could help many women. Large-scale clinical trials are being developed. If the team finds similar results in these larger studies, the \$100 test could begin to be introduced in doctors’ office in three to five years.







PILLAR OF  
PROGRESS

The center hopes to increase vaccine participation from its current rate of 25 percent to 80 percent by 2020. Cervical cancer is among the most preventable and curable cancers.





Leslie Edmond is participating in an immune therapy clinical trial for triple-negative breast cancer.

## Breast Cancer Turning a Negative into a Positive

MARYLAND IS HOME to twice the number of African-American women than the national average, making breast cancer disparities a critically important issue for our state. Breast cancer is also the second most frequently diagnosed cancer in Maryland. Although white women have a higher incidence of breast cancer, more black women die of the disease. Mammography usage is higher among black women than white women in Maryland, so screening and early detection does not account for the disparities in survival.

One important factor is biology. African-American women in Maryland suffer disproportionately from a treatment-resistant type of breast cancer, known as triple-negative breast cancer. This aggressive type of cancer has the lowest survival rates of all breast cancers, according to breast cancer expert Saraswati Sukumar.

Sukumar and other Kimmel Cancer Center breast cancer scientists are exploring new treatment for a triple-negative breast cancer. Clinical trials of

therapeutic advances, such as immune therapy and epigenetic treatments that help prime cancers to respond better to anticancer drugs, are being actively targeted to African-American women with triple-negative breast cancer.

One promising approach now being studied uses new targeted agents known as HDAC inhibitors and aromatase inhibitors. Many of the heralded targeted treatments for breast cancer, such as tamoxifen and trastuzumab therapy, only work in patients whose cancers are sensitive to hormones—ER, PR and HER2 positive. Sukumar found that HDAC or histone deacetylase inhibitors can reactivate estrogen receptors and also make breast cancer cells sensitive to treatment with another class of targeted drugs known as aromatase inhibitors. Our experts are developing a database of patients with triple-negative breast cancer to ensure these women—particularly minority women—get information about clinical studies of promising new treatments.



**JOHNS HOPKINS**  
M E D I C I N E

THE SIDNEY KIMMEL  
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