

# Fulfilling a Mission

Moffitt leads the way through clinical advancements, research and grants.

As Moffitt Cancer Center nears its 25<sup>th</sup> anniversary in October 2011, its mission “to contribute to the prevention and cure of cancer” remains constant. Moffitt physicians and scientists are working hard to translate basic science discoveries into better cancer treatments. These recent clinical advancements and life-saving research pioneered at Moffitt are evidence of their commitment:

## Reducing Neurosurgery Planning Time

Moffitt neurosurgeon Surbhi Jain, M.D., developed a patent-pending technique to significantly reduce the time required to use an innovative brain-mapping tool. The tool, called diffusion tractography, incorporates imaging data real-time during surgery, allowing neurosurgeons to clearly distinguish between healthy tissue and tumor cells. The original system took up to six hours to map the brain as a single organ. Dr. Jain isolated major functional centers of the brain using a technique involving mathematical formulas and reduced the planning time to 10 minutes.

## Expanding the Use of Surgical Robotics Technology

Moffitt thoracic surgeon Eric Sommers, M.D., performed the first robotic-assisted lung surgery in the Tampa



PHOTO: DICK DICKINSON

Moffitt neurosurgeon Surbhi Jain, M.D., used a patent-pending technique to isolate major functional centers of the brain.

Bay area in 2009. Currently, Moffitt physicians also are performing da Vinci<sup>®</sup> robotic-assisted surgery on patients with prostate and other urologic cancers, uterine and other gynecologic cancers, and certain endocrine tumors. The technology allows surgeons to perform complex and delicate procedures using very small incisions with unmatched precision, speed and safety.

## Pioneering HPV Research

Moffitt's Anna Giuliano, Ph.D., pioneered research leading to the licensure of GARDASIL, a vaccine against human papillomavirus (HPV), which is known to cause cervical cancer in women. The National Institutes of Health awarded Moffitt a more than \$2 million grant to fund a study led by Susan Vadaparampil, Ph.D., about the influences of physician, patient and policy factors on recommendations of HPV vaccination. Co-investigators include Dr. Giuliano, Ji-Hyun Lee, Ph.D., and Gwendolyn Quinn, Ph.D., among other co-investigators from USF Health, Johns Hopkins Bloomberg School of Public Health and Cincinnati Children's Hospital Medical Center.

## Earning Physical Sciences-Oncology Center Grant

A Moffitt team, led by Robert Gatenby, M.D., was awarded a grant to be a participating “Physical Sciences-Oncology Center” (PS-OC) as part of a National Cancer Institute (NCI) initiative that

will bring together a team of theoretical physicists, mathematicians, chemists and engineers to the study of cancer. Moffitt is one of 12 centers funded under this American Recovery and Reinvestment Act program. The award of Moffitt's PS-OC is for \$3.7 million over two years.

## Designing Lymph Nodes to Help Rebuild Immunity

The NCI awarded Moffitt, in collaboration with researchers at Scripps Florida, a five-year, nearly \$2 million grant to design lymph nodes for cancer immunotherapy. Moffitt's James Mulé, Ph.D., says the designer lymph nodes will help rebuild a patient's immune system to better fight cancer and other diseases. Researchers also hope to increase the potency of vaccines.

## Linking Genetics to Increased Risk of Ovarian Cancer

An international research group, including Moffitt scientists, located a region of DNA that, when altered, can increase the risk of ovarian cancer. The research was published in *Nature Genetics* and was highlighted in the *Wall Street Journal*. The scientists estimate that there is a 40 percent increase in lifetime risk for women carrying the DNA variation on both copies of chromosome 9 compared with someone who doesn't carry it on either chromosome. The lifetime risk for a woman carrying the DNA variant on one copy of chromosome is increased by 20 percent.



PHOTO: NICHOLAS GOULD

Delicate surgeries of rare tumors are being performed with greater speed, precision and safety at Moffitt with the da Vinci<sup>®</sup> Surgical System.