Two Memorial Sloan Kettering studies that demonstrate advances in the personalized treatment of cancer were highlighted in the press program of one of the nation's major cancer research meetings – the American Association for Cancer Research (AACR) Annual Meeting 2012.

In addition, physician-scientist Charles Sawyers was officially inaugurated as President-elect of the AACR and named a "Dream Team" leader by Stand Up To Cancer (SU2C) and the Prostate Cancer Foundation (PCF), and molecular pharmacologist Bayard Clarkson was presented with the AACR's Distinguished Service Award for his decades of service to the organization. Cancer biologist Richard Mark White was also honored with the AACR-Conquer Cancer Foundation of ASCO Young Investigator Translational Cancer Research Award.

Highlighted Study: Discovery of Novel Drug Vulnerability in Glioblastoma

Glioblastoma, the most common form of brain cancer in adults, is one of the most resistant of all cancers to treatment. A protein called epidermal growth factor receptor (EGFR) is frequently overexpressed or mutated in glioblastoma and in some other cancers, including lung cancer. While lung cancer patients who have an *EGFR* mutation generally respond well to erlotinib (Tarceva®), a targeted therapy called an EGFR kinase inhibitor, only a small percentage of glioblastoma patients with changes in EGFR respond to this drug.

By researching glioblastoma cell lines and mouse models, neuro-oncologist Ingo Melinghoff and colleagues discovered that *EGFR* mutations that often occur in glioblastoma differ from those that occur in lung cancer — a finding that may explain why these tumors usually do not respond to the EGFR-targeting drugs used in lung cancer.

The research indicates that the type of *EGFR* mutation that often occurs in glioblastoma may be more sensitive to different EGFR kinase inhibitors, and the researchers are now conducting additional laboratory studies to evaluate the response these drugs may have on glioblastomas, whether used alone or in combination with other drugs.

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Highlighted Study: Novel Imaging Tool to Detect Prostate Cancer

Increased levels of prostate-specific antigen (PSA), a protein produced by cells of the prostate gland, can be an indication of prostate cancer as well as of other abnormalities of the prostate. A test that screens for elevated levels of PSA in the blood is currently used to help detect early cell changes in the prostate in men who are at risk for developing prostate cancer, and to monitor tumor response to therapy. However, in addition to the test's inability to distinguish between PSA produced by normal versus malignant prostate tissue, it has many shortcomings in the diagnosis and monitoring of disease.

Human Oncology and Pathogenesis Program (HOPP) researcher Michael Evans and colleagues reported on a new way to measure PSA that could provide a more accurate way to stage or monitor prostate cancer when compared with the PSA blood test. Using animal models, Dr. Evans and colleagues developed an imaging tool that they showed can be used to measure the levels of PSA at prostate cancer tumor sites where a PSA blood test may be uninformative.

The tool is based on a radioactive molecule called a radiotracer, which upon injection into the bloodstream bypasses serum PSA to specifically bind to the form of PSA present in the tumor microenvironment, allowing tumor foci to be detected in a PET scan. Notably, the radiotracer sensitively measured changes in tumor biology triggered by the antiandrogen MDV3100, a promising prostate cancer therapy developed by Memorial Sloan Kettering's Charles Sawyers and Chief of the Genitourinary Oncology Service, Howard Scher.

In addition to detecting prostate cancer cells and measuring treatment-induced changes in PSA expression, the imaging method was able to identify metastatic prostate cancer lesions in the bone — the most common site of prostate cancer metastasis. In this regard, the radiotracer could effectively complement clinical bone scans, which although useful and routinely used, are unable to discriminate between malignant and nonmalignant lesions in patients.

If translated into the clinic, the new imaging technology has the potential to help clinicians more accurately stage prostate cancer and more clearly evaluate treatment response to targeted therapies. In both respects, the radiotracer may empower clinical decision making to develop treatment plans that are better tailored to individual patients' disease.

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Charles Sawyers Named Dream Team Leader

Human Oncology and Pathogenesis (HOPP) Chair Charles Sawyers will co-lead a new Stand Up To Cancer (SU2C)-Prostate Cancer Foundation (PCF) "Dream Team" dedicated to prostate cancer research. Titled "Precision Therapy for Advanced Prostate Cancer," the new project will focus on patients with metastatic prostate cancer. Along with co-leader Arul M. Chinnaiyan, of the University of Michigan, Dr. Sawyers and Dream Team scientists will evaluate new and existing therapies for advanced prostate cancer, and work to identify predictors for those patients who respond to these therapies as well as predictors for those patients whose cancer resists them.

The SU2C-PCF Prostate Dream Team Translational Cancer Research Grant will provide funding of $10 million over a three-year period. SU2C has awarded grants to six other Dream Teams, which in total are composed of 270 scientists from 67 different institutions. Memorial Sloan Kettering's own President and CEO Craig Thompson also co-leads a Dream Team dedicated to pancreatic cancer research.

Watch this video to learn more about the creation of this SU2C-PCF Prostate Cancer Dream Team and its goals.

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Bayard Clarkson Honored with AACR Distinguished Service Award

Bayard Clarkson of Memorial Sloan Kettering's Department of Medicine and the Sloan Kettering Institute's Molecular Pharmacology and Chemistry Program was honored with the AACR's Distinguished Service Award for his work on behalf of the AACR for over three decades.

Dr. Clarkson served two terms on the AACR Board of Directors and was elected president in 1980. He was later recruited to serve as AACR treasurer, and served in that position for a record 15 years. His most recent service to the organization has been in the capacity of president and chairman of the AACR Foundation for the Prevention and Cure of Cancer. He was the driving force behind creating the Foundation in 2001 and has overseen its growth for the past 11 years. This year, Dr. Clarkson becomes a 50-year member of the AACR. No individual in the history of the AACR has given so much of his time and efforts to the AACR and its mission.

Dr. Clarkson's laboratory is investigating the differences between normal and quiescent cancer stem cells in chronic myelogenous leukemia and faulty quorum sensing as the leukemic cells in the chronic phase become more fully transformed and the disease progresses to a rapidly fatal blastic phase. By studying the core biological principles that govern and fuel cancer formation, Dr. Clarkson and his colleagues were among the first to develop and optimize treatment programs for adults with acute leukemias and lymphomas. It is likely that Dr. Clarkson's research will be applicable to many other types of cancer.

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