The UAB Comprehensive Cancer Center, in collaboration with the University of Minnesota, has won an $11.5-million grant from the National Cancer Institute to explore groundbreaking pancreatic cancer research, prevention and treatment.

The Specialized Program of Research Excellence (SPORE) in pancreatic cancer is designed to draw upon UAB and its partner's advances in genomic medicine and the promise of new anti-cancer agents pioneered by UAB researchers.

Pancreatic cancer remains the fourth leading cause of cancer death overall in the United States, with more than 43,000 new cases of pancreatic cancer each year. In Alabama, an estimated 590 deaths from pancreatic cancer are likely to occur in 2010, according to the American Cancer Society. Obesity, proven to be an epidemic in the South and other regions, is

associated with lower survival rates for pancreatic cancer.

“Given the current bleak outlook for patients diagnosed with pancreatic cancer, this SPORE grant gives us an opportunity to make real progress in diagnosis and treatment of the disease,” said UAB Cancer Center Director Edward Partridge, M.D., president-elect of the American Cancer Society National Board of Directors. “The partners in this project have the translational research experience and know-how to move discoveries from the laboratory into the clinical setting with remarkable success.”

The grant will focus on leading-edge biomarkers – biological warning signs that cancer, such as a pancreatic tumor, is present or likely to develop. It will also test new therapeutic agents that have shown promise in preventing, slowing or effectively treating the disease. Many of the projects draw upon new discoveries in genomic medicine and combination therapies, said Donald Buchsbaum, Ph.D, a senior scientist at the UAB Comprehensive Cancer Center and pancreatic SPORE leader. The co-leader is Selwyn Vickers, M.D., associate director of the University of Minnesota Masonic Cancer Center.

The partnership grant will fund four primary projects:

Biomarkers for earlier diagnosis. Testing continues on a combination of imaging techniques and blood sampling that will help identify biomarkers that can be used for the development of new and more effective screening tests for pancreatic cancer and pre-cancerous changes in the

pancreas. Levels of currently known tumor markers in the blood may be higher in people with pancreatic cancer, but the cancer is usually advanced and harder to treat once those higher levels are detected, emphasizing the need for newer biomarkers. Principal investigators are Christopher Klug, Ph.D., and William Grizzle, M.D., Ph.D., both of the UAB Comprehensive Cancer Center.

Targeted therapy with tigatuzimab. Clinical trials continue on a class of anti-cancer molecules called monoclonal antibodies, which enlist help from the body's immune system to fight tumors. One promising antibody is the UAB-discovered tigatuzimab, which is used in combination with other therapies to treat pancreatic cancer. Principal investigators are Buchsbaum, and Albert LoBuglio, M.D., director emeritus of the UAB Comprehensive Cancer Center.

Genomic analysis of cancer regulators. An in-depth genetic analysis of pancreatic cancer cells will be performed to help unravel the biological changes that lead to tumor growth, metastasis and treatment resistance. This genomic data will then be used to design new clinical trials that target the specific genes and cellular pathways that regulate cancer growth. Principal investigators are David Largaespada, Ph.D., of the University of Minnesota in Minneapolis; David Tuveson, M.D., Ph.D., of the University of Cambridge; and Christine Iacobuzio-Donahue, M.D., Ph.D., of Johns Hopkins University in Baltimore.

Targeting pancreatic cancer stem cells. Testing continues on experimental agents that can regulate a small subset of pancreatic cancer cells called stem cells, which are believed to be linked to many cases of inoperable pancreatic cancer. One promising agent is a genetically altered virus, called an adenovirus, designed to attack cancer cells while leaving healthy cells untouched. Principal investigators are David Curiel, M.D., Ph.D., of the UAB Comprehensive Cancer Center, and Masato Yamamoto, M.D., Ph.D. of the University of Minnesota in Minneapolis

In addition to these research projects, the SPORE grant supports a pancreatic cancer tissue resource center and a biostatistics program.

The NCI SPORE program started in 1992 as a way to promote interdisciplinary research and speed the transition of basic science findings to the clinical testing arena with the hope of reducing cancer-death rates and improving survival.

The UAB Comprehensive Cancer Center is among the 40 cancer centers in the nation to meet the stringent criteria for the NCI's comprehensive designation. The center is a leader in groundbreaking research, reducing cancer disparities and leading-edge patient care.

September 30, 2010