The Wistar Institute is an international leader in biomedical research with special expertise in cancer, immunology and infectious disease research.

The Institute works actively to ensure research advances are aimed at curing disease and improving public health. Founded in 1892, it is the nation’s first independent nonprofit biomedical research institute. Wistar has long held the prestigious Cancer Center designation from the National Cancer Institute; its 2014 review by NCI recommended renewal of Wistar’s Cancer Center designation with a score of “Exceptional”—the highest possible rating.

Collaborative “Team Science” is a hallmark strength of Wistar. This modern approach increases understanding of basic aspects of cell biology and enables Wistar to translate scientific discoveries into practical therapies. This approach has led to numerous Wistar-developed vaccines, which have transformed human health, and advances that continue to blaze new paths in cancer research. In 2014, Wistar opened the Robert and Penny Fox Tower, which adds nearly 90,000 square feet of support facilities, meeting spaces, and open-design laboratories purpose-built for team science.

CANCER CENTER

The Wistar Institute Cancer Center has a history of significant advances in cancer genetics, cancer biology, tumor immunology, and virology. The Cancer Center merges the study of cancer biology with translational advances toward cancer prevention, diagnosis, and therapy. Cancer Center scientists conduct research on the entire spectrum of cancer biology. Their pioneering work spans from genetics and the molecular and cellular events that spawn cancer, to the role of the tumor microenvironment in cancer metastasis. Their research also targets how the human immune system can be trained to recognize and fight tumors, with the potential to drive immune system therapies.

Accomplishments of the Cancer Center

• Identifying the genes associated with breast, lung, and prostate cancers.
• Pioneering the science of monoclonal antibodies used to study the pathways and proteins involved in tumor development.
• Improving cancer treatments and diagnostic tests for disease, including a recent blood test for lung cancer, currently in clinical trials.
MELANOMA RESEARCH CENTER

The Wistar Institute Melanoma Research Center brings together a core group of cancer researchers to leverage their melanoma expertise into partnerships with medical, pharmaceutical, government, and advocacy groups. The group studies the unique biology of melanoma with the goal of developing new therapies, diagnostic tests and preventative measures to curb the rising death rates from melanoma.

TRAINING AND OUTREACH

Education and training are central to The Wistar Institute’s mission. In the past decade alone, nearly 1,000 promising researchers were trained at Wistar, including pre-doctoral students, postdoctoral fellows, and visiting scientists.

Providing science and cancer education to high school students and underserved populations in the community is a priority. Wistar’s Biomedical Training Program prepares students for new career opportunities as research technicians. This program is a joint effort between Wistar and the Community College of Philadelphia, which combines academic coursework with specialized hands-on training in research laboratories at Wistar and other affiliated research institutes.
WISTAR SCIENCE SAVES LIVES

Wistar researchers have an international reputation for transforming basic scientific knowledge into practical medical interventions.

Recent Wistar advances include:

New Prostate Cancer Drug:
Wistar President and CEO, Dr. Dario Altieri, has received a Department of Defense Grant to turn his novel drug, Gamitrinib, into a therapy for prostate cancer. The drug makes tumor mitochondria—and only tumor mitochondria—more sensitive to conventional therapies. The grant will allow Dr. Altieri to perform the tests necessary to receive Investigational New Drug status from the FDA, the first step to conducting human clinical trials.

World’s Largest Curative HIV Trial:
HIV survives in “reservoirs” within the cells of patients with HIV/AIDS, re-infesting patients at every opportunity and making them dependent on antiretroviral drugs for the rest of their lives. Wistar's Dr. Luis Montaner has partnered with local Philadelphia HIV treatment centers to conduct the first trial to attempt to drain these reservoirs, which is, in essence, an attempt to cure patients. Dr. Montaner will treat patients on antiretroviral therapy with a new form of interferon (a synthetic version of a protein made naturally by the immune system), which will help the immune system (recovered with help of antiretroviral therapy) to flush the body of HIV.

The First Drug against Epstein-Barr Virus Cancers:
Epstein-Barr virus (EBV) is a nearly ubiquitous contagion linked to a number of diseases including head and neck cancer. Wistar's Dr. Paul Lieberman is developing the first drug against EBV, one that specifically targets and inhibits a viral protein called EBNA1, which is crucial for the survival of the virus. With funding from Wellcome Trust, a UK-based charity, Dr. Lieberman is currently conducting the medicinal chemistry work necessary to transform this research concept into medical reality.
A Viral Cause for Breast Cancer:
Epstein-Barr virus (EBV) has also been associated with advanced stage breast cancer, but without a clear causative link—until now. Dr. Kazuko Nishikura, an internationally recognized expert on RNA biology, discovered a mechanism that connects metastatic breast cancer with viral “micro RNA” (miRNA)—a molecule transcribed from Epstein-Barr virus DNA. Her laboratory is now using her discoveries to create new diagnostic tests to aid oncologists in identifying which breast cancer patients may develop metastatic disease.

A Blood Test for Lung Cancer:
Lung cancer remains the primary cause of cancer-related death, in part, because there is currently no efficient way to screen people for lung cancer at an early stage. Dr. Louise C. Showe aims to reduce lung cancer death with the first practical blood test for lung cancer. The test is designed to measure the relevant amounts of particular molecules in the blood that could indicate the onset of lung cancer. Her test is already being used in a clinical trial featuring people at-risk for developing the disease.
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