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University of Wisconsin Carbone Cancer Center

The University of Wisconsin Carbone Cancer Center (UWCCC) is an integrated, collaborative center with a rich history in cancer research, education, and treatment. Beginning with the establishment of the McArdle Laboratory for Cancer Research at the University of Wisconsin, the University subsequently started the University of Wisconsin Clinical Cancer Center. The two facilities were combined in 1973 as the University of Wisconsin Comprehensive Cancer Center. In 2006, the center was renamed the University of Wisconsin Carbone Cancer Center for Dr. Paul P. Carbone, who served as the Director of the Center from 1978 until 1997. The Center now employs more than 2,400 staff, including 280 doctors and scientists and sees over 30,000 patients per year. Spanning a period of over seventy years, the center has evolved into a facility at the forefront of cancer research and treatment.

The McArdle Laboratory for Cancer Research, funded largely by the donations of private area residents, was established during the 1940s as the first basic science cancer center at an academic institution in the United States.

The cancer research program was created by Dr. Harold P. Rusch, the first Director of the McArdle Laboratory. Dr. Rusch remained as Director until 1972 and did much to solidify the laboratory's prominence, chiefly by selecting a number of talented young scientists whose work helped gain the laboratory its international standing as a premiere institution for cancer research.

Much of the early research conducted at the McArdle Laboratory focused on chemical carcinogenesis, that is, potential chemical causes of cancer, and how these chemicals and carcinogens created genetic changes in cells which resulted in cancer. Scientists also initially concentrated on the biochemistry of malignant cells, particularly focusing on the differences between cancer cells and healthy cells.

In 1951, Dr. Charles Heidelberger began the process of synthesizing and clinically developing 5-fluorouracil (5-FU), a drug used to this day in the treatment of basal-cell carcinoma, pancreatic cancer, breast cancer, rectal cancer, colon cancer, head and neck cancer, and stomach cancer, among others. Dr. Heidelberger received a patent for the drug in 1959. 5-fluorouracil is on the World Health Organization's List of Essential Medicines, a list of the most important medications needed in a basic health system.

In 1975, Dr. Howard Temin was awarded the Nobel Prize in Physiology and Medicine, along with Drs. David Baltimore and Renato Dulbecco, for the discovery of reverse transcriptase. His experiments provided evidence of the ability of retroviruses to perform DNA synthesis and led to a flurry of research into retroviruses. Dr. Temin was subsequently appointed to the national committee whose work formed the basis of the bill that became the National Cancer Act, signed into law by former president Richard Nixon.

In the 1970s, the Center began conducting Phase I trials, that is, trials involving a very small number of participants in order to determine the safety, dose range, and side effects of a treatment. Phase I trials are the first step in evaluating, researching, and approving a drug for treatment.

In 1973, the same year the University of Wisconsin Clinical Cancer Center was formed, the Center also received the National Cancer Institute (NCI) designation as a comprehensive facility, one of only six in the United States. To date, the Center is the only comprehensive cancer center in Wisconsin. Forty-one of the 68 NCI-designated cancer centers in the United States are comprehensive cancer centers.

In order to gain the title of comprehensive cancer center (the highest ranking given by the NCI), a facility must meet and adhere to specific guidelines. These include a strong basis in laboratory and clinical cancer research, combined into translational research, which is the practical application of research findings. Additionally, the center must offer cutting edge cancer treatments involving clinical trials, cancer prevention and control programs, training and instruction of health care staff, cancer information services, and community outreach and instruction.

Toward this end, UWCCC is involved in a number of programs and research areas not only to continue to meet the rigorous guidelines set forth by the NCI, but to provide the best care possible for its patients. The Center treats an array of cancers and related issues, from breast cancer, head and neck cancer, and lymphoma, to pediatric hematology and oncology. It also provides ancillary care including genetic counseling, integrative medicine, palliative care medicine, and psychology, social work, and spiritual care.

Research scientists, academic faculty, and physicians collaborate across eight different research programs: cancer control, cancer genetics, chemoprevention, experimental therapeutics, human cancer virology, imaging and radiation sciences, nuclear signaling, and tumor microenvironment. More than 250 clinical trials are open to patient accrual in a wide variety of areas.

UWCCC is involved in research involving outside facilities as well. The Wisconsin Oncology Network (WON) is one example. WON provides the opportunity for patients being treated at approved, community treatment centers in Wisconsin and northern Illinois to enroll in certain clinical trials run by UWCCC.

UWCC is also a member of the Wisconsin Network for Health Research, another, similar network that promotes collaboration with researchers at other facilities throughout Wisconsin.

With regard to cancer prevention and control, the UWCCC collaborates with the University of Wisconsin Center for Tobacco Research and Intervention (UW-CTRI). UW-CTRI conducts tobacco research that is applied to tobacco treatment in healthcare clinics throughout Wisconsin.

UWCCC is also a member of the Wisconsin Comprehensive Cancer Control Program. This program focuses on coordinating the efforts of public, private and community member institutions in order to facilitate a statewide method to best control cancer.

Additionally, UWCCC partners with two minority outreach programs. The first is the Partnerships with Underserved/ Minority Populations, a program which uses established principles of community-based research to support successful research with its population of subjects. The project is investigating community preparedness for change and assessing quality cancer care in eight underserved communities, including African Americans, Latinos, Hmong, American Indians, Amish, and the rural poor.

The second outreach program, the Spirit of Eagles, works to prevent and control cancer, and use research findings to improve health outcomes in American Indian / Alaska Native populations in Wisconsin. Since the program's creation in 2000, UWCCC has been a principle partner and subcontractor.

Lorna Rogahn

See Also: Chemoprevention, Chemotherapy, Clinical Trials, Experimental Cancer Drugs, National Cancer Institute, Nixon, Richard (War on Cancer)

Further Readings:

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