



## History and Innovation

UW Health is part of a long UW-Madison tradition of excellence and innovation in the health sciences. From the first premedical "Special Science" course offered in 1887 through the opening in 1924 of Wisconsin General Hospital and the establishment in 1925 of a full four-year medical degree program at the University, UW physicians and researchers have pursued their fourfold mission with vision and vigor.

Over the years, they have achieved numerous breakthroughs in medicine and health care. Their discoveries have helped extend the lives of people throughout the nation and the world. Among their many pioneering treatment initiatives, studies, administrative innovations and discoveries are the following:

### 1920s

- Wisconsin General Hospital (UW Hospital and Clinics) established by the Wisconsin Legislature, located at 1300 University Avenue (1924)
- Creation by the medical school of the nation's first preceptor program offering medical students clinical experience with practicing community physicians (1926)

### 1930s

- Development of the Mohs micrographic surgery technique, still the standard of care to treat skin cancer while sparing normal tissue (Dr. Frederic Mohs, 1930s)

### 1940s

- Establishment of McArdle Laboratory for Cancer Research as the nation's first basic science cancer center in an academic institution (1940)
- Identification of the wavelength of ultraviolet light that causes skin cancer (Dr. Harold P. Rusch, 1941)

### 1950s

- Identification of the role played by Vitamin A in cancer prevention (Dr. Roswell Boutwell, 1950s)
- Discovery of how bacteria reproduce and develop resistance to antibiotics (Joshua Lederberg, UW faculty member, Nobel Prize in medicine, 1958)
- Development of the concept that laid the foundation for combination drug therapy, now the most widely used method of drug treatment for cancer (Dr. Van R. Potter, 1951)
- Anti-cancer drug fluorouracil (FU-5) first synthesized (Dr. Charles Heidelberger, 1957)

### 1960s

- Discovery of how certain compounds block ultraviolet light, the foundation for SPF (sun protection factors) ratings now found on sunscreen and cosmetic products (Dr.

### Derek Cripps, 1960s)

- Discovery of method to predict the success of bone marrow transplant, giving new hope to patients with leukemia and immune deficiency diseases (Dr. Richard Hong, 1968)
- Discovery of evidence linking saccharine and cyclamates (now banned) with cancer development (Dr. George Bryan, 1969)

## 1970s

- Co-discovery of reverse transcriptase, an enzyme that explains how retroviruses cause cancer and AIDS (Dr. Howard Temin, co-recipient, Nobel Prize in medicine, 1975)
- UW Hospital and Clinics moved to its current west campus location, 600 Highland Avenue (1979)

## 1980s

- First clinical trials of two types of interferon produced by recombinant DNA (Dr. Ernest Borden, 1980s)
- First study in the U.S. to determine the long-term effects of the drug tamoxifen in postmenopausal women who have had cancer (Dr. Richard Love, 1986)
- First clinical trials with DFMO, a potential cancer-preventing agent now under study in the treatment of bladder, prostate, colorectal and skin cancers (Dr. Paul Carbone and Dr. Richard Love, 1986)
- First studies on the effective dosages of interleukin-2, a substance to boost the body's immune system (Dr. Paul Sondel, 1986)
- Development of "UW Solution," a fluid that increases the time organs can be preserved for transplant (Dr. Folkert Belzer and biochemist James Southard, 1987)

## 1990s

- Testing of "gene gun" technology to deliver new genetic material to tumor cells to elicit an immune response to cancer (Dr. David Mahvi, 1996)
- UW Hospital and Clinics reorganized as a public authority (1996)
- First clinical trials to test the nicotine patch conducted at the [University of Wisconsin Center for Tobacco Research and Intervention \(UW-CTRI\)](#).
- [UW-CTRI](#) chairs panel for first U.S. Public Health Clinical Practice Guideline on treating tobacco dependence.

## 2000s

- Dr. Perry Pickhardt demonstrated that virtual colonoscopy is as effective as conventional colonoscopy in routine screening for colon cancer (2003)
- Dr. Timothy Kamp demonstrated that human embryonic stem cells can grow into the three major types of heart muscle cells found in the human body (2003)
- [University of Wisconsin Center for Tobacco Research and Intervention \(UW-CTRI\)](#) publishes National Action Plan for Tobacco Cessation at the request of Health and Human Services Secretary Tommy Thompson. Leads to creation of the National Tobacco Quit Line.
- Timothy Kamp and James Thomson led a team that created functional human heart muscle cells from genetically reprogrammed skin cells. The American Heart

Association named the discovery one of the 10 most important research advances for cardiovascular disease and stroke for 2009. (2009)

## **2010s**

- Mark Sager and Sterling Johnson released studies involving a newly discovered gene (TOMM40) that shows that Alzheimer's disease could be diagnosed as much as 20 years before symptoms develop. (2010)

## **Research at the University of Wisconsin School of Medicine and Public Health**

Learn more about how UW Health and the [University of Wisconsin School of Medicine and Public Health](#) are advancing a long tradition of translating laboratory discoveries to bedside application:

[UW School of Medicine and Public Health Research: Today's Advances, Tomorrow's Cures](#)