



"In Medicine, Hope Springs from Research."

Lankenau Institute for Medical Research

1927 to 2007

80 Years of Research Excellence

LIMR Proudly Celebrates Science and Medicine

As the Lankenau Institute for Medical Research (LIMR) celebrates its 80th year, one of only eleven independent research institutes nationwide to have reached this milestone, we recognize the important role that science and research have played in the advancement of medicine including the diagnosis, treatment, prevention and eradication of many diseases.

As we celebrate this momentous occasion, it is important to look back at some of the world's historical scientific discoveries and breakthroughs that continue to have an impact on health today. One of the earliest and greatest discoveries of medicine is that of X-rays by Wilhelm Röntgen in 1895. This represented the first time the inner workings of the body could be looked at without having to perform surgery and continues to be an important part of medicine today. Three early important breakthroughs in disease treatment and prevention that continue to influence health care include the extraction of insulin from the pancreas by Frederick Banting and Charles Best in 1921; the discovery of penicillin by Alexander Fleming in 1928; and the first vaccine for polio by Dr. Jonas Salk in 1955. Another milestone in research was the structure of DNA-helix in 1953 by James Watson and Francis Crick. This knowledge of DNA allowed a new way of looking at biological processes with the ability to develop new techniques to understand the role of different genes in both humans and animals.

Over the past 60 years there have been



the development of new treatments to fight disease and new diagnostics to identify individuals at risk for certain diseases. This includes the widespread use of chemotherapy in the 1960s and the BRCA1 or BRCA2 testing that shows inheritance of known mutations that gives individuals an increased risk of developing breast and ovarian cancer. Additionally, there has been an outpouring of disease-related gene discovery, such as the gene that causes cystic fibrosis in 1989. Another critical milestone was the sequencing of the human genome in 2001, which continues to be refined and detailed today. This work has the potential to improve diagnosis of disease, identify earlier detection of genetic predispositions to disease, pro-

vide gene therapy and create new medications through rational drug design and customized drug therapy.

Research is a commitment and investment in the future, oftentimes laying the foundation for the development of new medicines, technologies, and valuable research tools. Advances in research are the result of the hard, intensive work of teams of scientists from various disciplines. The work done today could have an impact in the years to come and work on one drug to treat a certain disease may prove to have beneficial applications to another disease. We celebrate LIMR's continued dedication to basic, translational, and clinical research and hope this critical work continues for another 80 years.





The History of the Lankenau Institute for Medical Research



1917

Stanley P. Reimann joined the *Lankenau Hospital* as Chief Pathologist, but only under the condition that he could build a research effort at the hospital. His vision along with that of **Frederick S. Hammett**, a biologist and biochemist, instilled a basic research philosophy with the novel insight to use wound healing as a model to study cell division in cancer. They believed this work would allow a better understanding of the fundamental processes of cell division and could be used to help treat or prevent diseases.



Early 1920s

Through the assistance of **Dr. Harvey Shoemaker**, Chief of Medicine, and **Dr. John B. Deaver**, Chief of Surgery, both at *Lankenau Hospital*, they roused the interest of a friend and patient, **Rodman Wanamaker**. Mr. Wanamaker, LIMR's original benefactor and son of



John Wanamaker, Philadelphia businessman and "father" of the department store, donated funds to build a research center on the *Lankenau Hospital Campus*, which was located then at Girard and Corinthian in Philadelphia.

1925 to 1927

The new research building was dedicated in 1925, unveiling the brass seal "**FOR HUMANITY**", highlighting the hospital's fundamental commitment to research. This seal, which is still located in LIMR's current lobby, remains a



symbol of our Institute. The new center was named the *Lankenau Hospital Research Institute* (LHRI) and began its formal research program in 1927.

1927 to 1937

The support of the Pew Family, known for the creation of the Pew Charitable Trusts in honor of their parents, **Mary Anderson Pew** and **Joseph N. Pew**, founder of Sun Oil Company, were central to the growth of research at the LHRI. **J. Howard Pew** joined the LHRI Committee in 1935 and his sisters, **Ethel Pew** and **Mabel Pew Myrin** also supported the Institute for many years. In 1941, **Philip T. Sharples**, a Philadelphia industrialist and philanthropist, joined the LHRI Committee and together with Mr. Pew were the driving force behind the creation of the *Institute for Cancer Research* (ICR), an offshoot of the LHRI focused exclusively on cancer research and originally created to be able to access additional funding opportunities.



1930s and 1940s

In addition to cancer research at LHRI, the Institute became a center of excellence in nutrition and biochemistry including key studies by **Dr. Mary Bennett** that contributed to the discovery of Vitamin B12.

1947



Construction of a new facility for the ICR began in Fox Chase and was completed in November of 1949. In that same year, *Lankenau Hospital* committed to building new facilities in Overbrook that included a new building dedicated to research.

1950

ICR and LHRI merged their cancer research and began to share the new ICR facilities, which later became the *Fox Chase Cancer Center*.

1953 to 1958

Lankenau Hospital moved to its current site in Wynnewood, PA, on land donated by Mabel Pew Myrin, and the LHRI moved from Fox Chase to the first three floors of the *Medical Science Building*, which was built for the sole purpose of medical research. It was at this time that the LHRI became a separate entity known as the *Research Department of Lankenau Hospital*.



1957



Dr. Kaare Rodahl became Director of Research at *Lankenau Hospital* where research included work on cardiovascular disease, cancer, arthritis, aging, alcoholism, and work physiology including occupational medicine, rehabilitation, and environmental stress. In 1959, there were 40 scientists and technicians working in the labs. By 1964, that number had more than doubled to 85.

1970s

Extensive cancer research resumed within the department.

1980s

The *Lankenau Medical Research Center* (LMRC) was created and the *Hospital Research Division* was transferred to this new center. The LMRC was an independent institution established under the *Lankenau Hospital Foundation*. A few years later, *Main Line Health* formed and became the parent of and holding company for *Lankenau Hospital* and the *Lankenau Hospital Foundation*. During this time, research began to reflect the wider community of opportunities presented by clinical investigators from a four-hospital network on the Main Line, a suburban region west of Philadelphia.



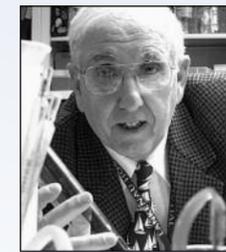
1992

With the guidance of **Dr. George Reichard**, President of the *Research Center*, the LMRC constructed a new state-of-the-art laboratory facility on the *Lankenau Hospital Campus*.



This 53,000 square foot, three-story building consisting of 16 laboratories, shared equipment rooms, and several additional core laboratories, remains the current home of LIMR researchers.

1998



Dr. Vincent J. Cristofalo, a leading researcher on aging, was recruited as President of LMRC and brought a number of new researchers to the Institute. Following his arrival the name of the Center was changed in 1999 to the *Lankenau Institute for Medical Research* (LIMR).

2004 to Present

Under the leadership of **Dr. George C. Prendergast**, LIMR scientists are focusing their research on cancer and cardiovascular disease. This exciting work is expanding studies of disease modifier genes, pioneering nanotechnology-based gene therapies as well as new pharmacological agents to treat cancer, exploring cardiovascular disease focused on hypertension and cardiac arrhythmias, and using basic and preclinical findings to create new prognostic and



therapeutic tools for clinical use. In addition to our research, LIMR also sponsors several educational initiatives that encourage both students and physicians to engage in research activities within our laboratories.

The Future

As we look ahead to the next ten years and as NIH funding enters a period of tighter federal budgets, our researchers are actively working to take LIMR's discoveries from bench to bedside through the creation of an exceptional environment where translational research has greater impact in both commercial and clinical settings.



Today TOMORROW & BEYOND

The Future of the Lankenau Institute for Medical Research



Today at LIMR, the focus of our research investigations are on cancer, cardiovascular disease, and diabetes with core strengths and expertise in disease modifier genes, cell signaling processes, transgenic mouse models of human disease, and novel therapeutic strategies. LIMR's unique location on the campus of Lankenau Hospital gives us access to clinicians who are working in the same areas as our researchers. We are continuing to bring together basic scientists, clinical researchers, and commercial ventures all aimed at improving the diagnosis, prognosis, prevention and treatment of diseases. The overall goal is moving lab discoveries from the bench to the patient bedside.

Currently, our greatest challenge is continuing to secure the necessary funding from external sources to support our research. With limited federal funding for biomedical research available and increased requests for funding nationwide, we must continue to find new ways to support our life-saving research.

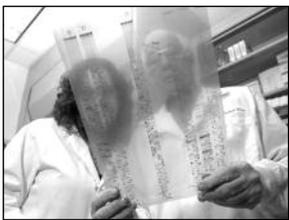
The future of LIMR lies in the addition of components that will drive clinical translation as well as commercialization of our laboratory discoveries. In order to accomplish this goal LIMR has established **LIMR Development, Inc. (LDI)**, which will work on developing certain in-house discoveries for potential commercial applications. This group will allow LIMR researchers to continue to focus on their research projects while following up on new methods, techniques, and products that might otherwise remain undeveloped.

In addition to LDI, the **LIMR Chemical Genomics Center (LCGC)** was formed to provide LIMR and other institutions statewide, access to large compound libraries for high-throughput screening. The

LCGC is efficiently storing and arraying millions of compounds that will be used to evaluate new drug targets allowing the acceleration of commercial development.

We are also working to collaborate and incubate new biotech companies by providing laboratory space for these companies to pursue research related to cancer, cardiovascular disease, and diabetes. LIMR has a strong, diverse environment where these companies have access to a wide range of services and scientific and medical talent. LIMR continues to attract companies who share their dedication to research and discovery.

While the Institute has changed over its 80 years, it has always maintained its dedication to improving human health. This commitment has been and will always be at the heart of LIMR's mission. 



Some of the critical work currently being done at LIMR includes:

- Phase III clinical trials to evaluate an experimental anti-coagulation drug for the prevention of stroke in patients with atrial fibrillation
- Phase I clinical trial to test safety of a new drug therapy to treat cancer and viral disease
- Nanotherapy technologies to treat prostate and ovarian cancer
- Improving the effectiveness of radiation and chemotherapy for cancer patients
- The development of a safe and simple way to test for pre-cancerous esophageal lesions
- A simple prognostic test to identify aggressive early-stage breast cancers



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