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DOE/CH/11100-1

**HOSPITAL FOR SPECIAL SURGERY
RESEARCH DIVISION**

**UNITED STATES DEPARTMENT OF ENERGY
GRANT NO. DE-FG02-01CH11100**

RENOVATION AND EXPANSION OF THE CASPARY RESEARCH BUILDING

FINAL REPORT

PUBLIC PARTNERSHIPS AID MODERNIZATION OF LABORATORIES

Critical to the Hospital's rebuilding efforts have been its public partners at the federal, state, and local government levels who have made a major financial commitment to renovating the Hospital's research infrastructure. To date, HSS has been awarded a total of nearly \$8.5 million to create and equip new, state-of-the-art laboratories for scientific investigations.

The modernization of the Hospital's research facilities was jump-started in 1998 with a \$950,000 seed grant from the National Institutes of Health (NIH) to renovate laboratories for immunology research in the Caspary Research Building. Coupled with a matching \$5.5 million commitment from HSS, this infusion of NIH funding laid the groundwork for an overhaul of all of the Hospital's research space.

A Shared Biotechnological Resource

One of the most significant elements of the Caspary rebuilding has been the renovation of the Hospital's Shared Resource Laboratories, a group of facilities that provide highly specialized equipment and techniques for basic scientific investigations into the causes of and treatments for musculoskeletal diseases. Under the direction of senior scientists and expert technicians, these laboratories have provided investigators with a multidimensional understanding of the structure, composition, and function of the tissues that make up the musculoskeletal system.

HSS shares these laboratories with leading scientists around the world, as well as investigators at neighboring research institutions in New York, including Memorial Sloan-Kettering Cancer Center, Columbia University, Mt. Sinai Hospital, and Weill Medical College of Cornell University. In collaboration with scientists from affiliated institutions, HSS investigators have ushered in important breakthroughs in musculoskeletal research and continue to lead to important new discoveries.

Federal Support Helps Rebuild Laboratories

In recognition of these laboratories as a shared resource, the United States Congress directed the United States Department of Health (DOH) to invest \$1.9 million in the rebuilding of the Hospital's laboratories. A grant from Health Resources and Services

Administration (HRSA), a DOH agency, has been used to purchase highly specialized scientific equipment to outfit the new facilities.

Along with this critical investment from HRSA, additional funding totaling \$1.9 million from the Department of Energy (DOE) and \$500,000 from the Community Enhancement Facilities Assistance Program (CEFAP) of the State of New York has helped to support further renovation and expansion of the Caspary Research Building.

Realizing the importance of medical research and biotechnology to the health of the New York community, New York City Department of Health has also granted \$3.2 million to HSS to support the modernization.

"We are extraordinarily grateful that our elected officials in the Congress have recognized HSS as a leader in musculoskeletal research," said Richard L. Menschel, Chairman Emeritus of the HSS Board of Trustees. "This public commitment is essential for the Hospital to continue to serve the larger scientific community by sharing our scientific resources with researchers around the globe."

Department of Energy Project Support

The expansion of the Ground, 6th, 7th and Penthouse floors of the Caspary Research Building has been completed and is fully occupied and operational. The project expanded and extended the 6th and 7th floors to the full "footprint" of the Caspary Building; converted an unused ground level parking garage into state-of-the-art Core Facility laboratories centralizing all Core functions to this 7,200 net square foot space; replaced and modernized the building infrastructure including new cooling tower systems and equipment, centralizing all major mechanical systems to a new penthouse location; provided expanded telecommunications and computing network routers and backbone for the building; state-of-the-art security system including fire and safety system; replacement of old laboratory equipment such as freezers, centrifuges and refrigerators.

The Ground Floor now houses the Research Division Core Facilities and Biomechanics Laboratory. Core Facilities include:

➤ **Infrared Imaging: relocated from Caspary 4th Floor**

Infrared imaging studies the structure of mineral components of bone using a self-contained imaging system developed by BioRad Corporation and does not require special utility services.

➤ **Analytical Microscopy: relocated from Caspary 4th Floor**

This Core provides tissue processing, microscopy, cryosection and frozen samples of tissue and transmission and electron microscope services.

➤ **Flow Cytometry (cell sorting): relocated from Caspary 5th Floor**

This Core provides cell analysis and sterile cell sorting services. The cell sorting equipment is a self-contained unit developed by Becton Dickinson and does not require special utility services.

➤ Mechanical Testing Core: relocated from Caspary 1st Floor

This Core provides investigative services toward understanding the material and structural properties of bones from small animals and at developing in vivo models for applying loads to bones. The Core does not require special utility services.

Specifically, funds from the United States Department of Energy supported the following construction activities related to the Phase 3 Expansion Project:

HVAC System Controls	\$578,000
Cold Room	\$146,000
Windows	\$165,000
Casework	\$518,000
Drywall & Ceilings	<u>\$511,000</u>
Total	\$1,918,000

HVAC Controls maintain through computer sensors the volume, velocity and air temperature throughout laboratory space. These controls also maintain air volume in climate controlled rooms such as tissue culture and clean rooms;

The cold room is an enclosed walk-in unit used to store high temperature sensitive cells and compounds. Benchtops within the cold room are used for cell and culture preparation within this environment;

Windows and drywall and ceilings: the Phase 3 project involves the addition of new floors to the Caspary Research Building;

Casework is the storage and work areas throughout the laboratory for scientific investigations by researchers and technician. Casework is made of solid wood sides and solid epoxy tops and sealed to be acid and bacteria resistant.

The attached publications highlight some of the research performed by Hospital for Special Surgery. The expansion of our research facilities, through support from the Department of Energy, has enabled us to also expand our musculoskeletal research program.