

HIGH HOPE

A LONG WAY FROM GENOA, ITALY, where he was born, Dr. Massimo Trucco, the Henry L. Hillman Professor of Pediatric Immunology at Children's Hospital of Pittsburgh, is reaching for lofty goals with his feet planted firmly on the ground.

When Dr. Trucco was brought to Children's Hospital in 1986, it was with the idea that he would help put Pittsburgh on the map of diabetes research in the United States. He's been working toward that goal ever since. Now, as the director of the pediatric division of the new University of Pittsburgh Diabetes Institute, for both Dr. Trucco and Children's Hospital, the sky is the limit.

BY SUSAN BRIMO-COX

Generous Support Abounds

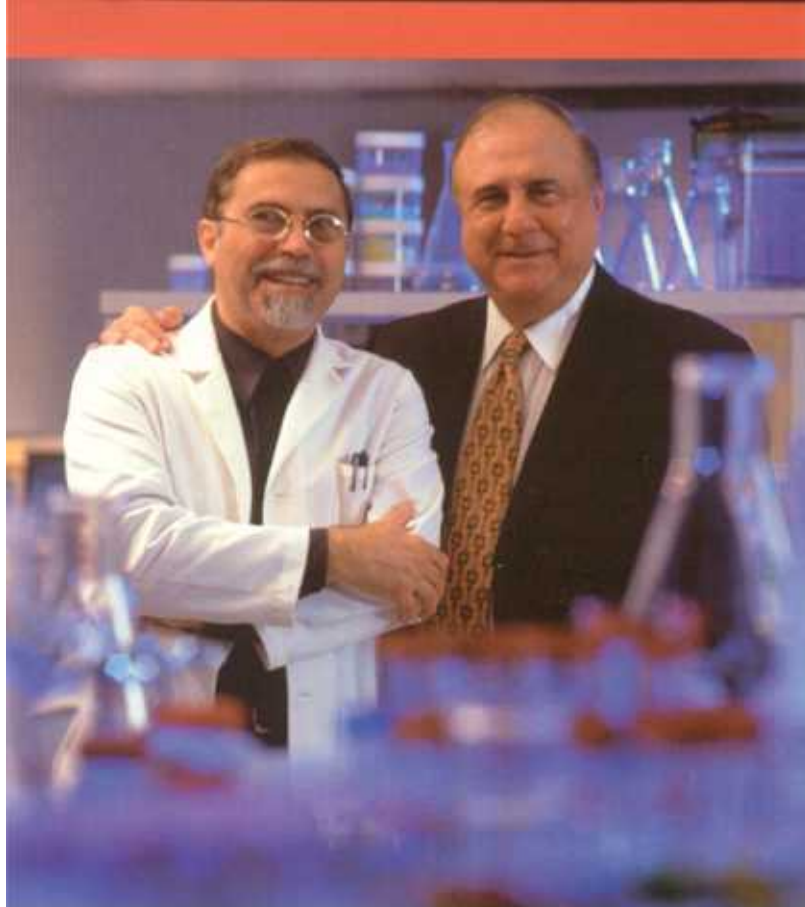
Dr. Trucco's sole focus is finding a cure for type 1 diabetes (also known as juvenile diabetes or insulin-dependent diabetes mellitus). "Diabetes is an acute disease that requires serious study if a cure is to be discovered," says Dr. Trucco.

Fortunately, his research has attracted significant attention and garnered tremendous financial support. In fact, the generous gifts and grants that are providing dedicated funding for the study of type 1 diabetes at Children's Hospital total approximately \$35 million.

Support for Dr. Trucco's work comes from both public and private sources. The largest individual gift was given by Mr. John G. Rangos Sr., who contributed \$3 million to establish the John G. Rangos Sr. – Massimo M. Trucco, MD, Diabetes Research Institute, which is the laboratory space where Dr. Trucco is conducting his world-renowned work. (See related story on page 8.)

The Juvenile Diabetes Foundation International gave a \$10 million grant to the institute; and two grants totaling \$14 million have been appropriated by the Department of Defense. Dr. Trucco's research also is being funded by grants totaling approximately \$1.5 million from the National Institutes of Health.

"I'm overwhelmed by the enthusiasm of Children's Board of Trustees and administrators, Mr. Rangos, the community here in Pittsburgh, the local branch of the Juvenile Diabetes Foundation and by the government," exclaims Dr. Trucco. "With their support, we have been able to construct a brand new, state-of-the-art facility that will enable me to recruit more world-class clinicians and scientists who will focus only on solving the problem of diabetes."



Photos by Ric Evans

Dr. Massimo M. Trucco and John G. Rangos Sr. pair up to defeat type 1 diabetes.

Location, Location, Location

What's true for real estate is true for the Diabetes Institute—an ideal location can't be beat. The new 10,000-square-foot institute, which is housed on the fifth floor of the John G. Rangos Sr. Research Center at Children's Hospital of Pittsburgh, was unveiled on Oct. 17.

Though the new lab was several years in the making, the real work begins now. However, the fact that the new lab resides on Children's campus close to several other important medical research centers will help ensure the institute's success.

"Over the last 10 to 15 years, the Diabetes Department at Children's Hospital has been one of the most effective medical centers for the care of children with diabetes in all of western Pennsylvania," Dr. Trucco observes. "The new research institute serves as a complement to that care. If the institute's researchers find something that can be useful, it can be taken to the bedside immediately."

Another benefit to the new institute's location is the proximity to Children's Department of Pediatric Transplantation, which is one of the largest pediatric transplant centers in the world. "Since the only realistic therapy for children with diabetes is the transplant of islets of the pancreas, if today we find a way to guarantee the success of the transplant, tomorrow we could do all the transplants we need right here," explains Dr. Trucco.

In an effort to ensure the successful transplant of islets, other researchers in Pittsburgh are exploring gene therapy at the Juvenile Diabetes Center for Gene Therapy Approaches to Type 1 Diabetes, one of the three largest centers for gene therapy in the United States.

"If you put all of these things together, it's clear that Pittsburgh is the best place to really approach the problem of diabetes," reports Dr. Trucco.

A Clear Focus

The pediatric division of the Diabetes Institute has three objectives. The first is to find the cause of the disease. "If you find the cause, you can find the solution," says Dr. Trucco.

The second objective is prediction—the ability to forecast which children will develop diabetes and which ones won't. "If we are able to be more accurate with our prediction, we can start to treat children before the disease has damaged healthy cells and organs," explains Dr. Trucco.

The division's third objective is to learn what can be done for children who already have diabetes. For example, Dr. Trucco and his staff hope to make islet transplantation a reliable alternative to insulin injections.

"We are approaching islet transplantation, not only through gene therapy, but also by trying to make a diabetic patient tolerant of the tissue from the donor. This is important because you can't use anti-rejection medication in children for extended periods of time," explains Dr. Trucco.

The diabetes research team, from left to right—Ying Jian Zhang, MD; Massimo Trucco, MD; Massimo Pietropaolo, MD; Susan Pietropaolo, PS.



“Diabetes is an acute disease that requires serious study if a cure is to be discovered.”

Dr. Massimo M. Trucco

Sharing His Success

Through its affiliation with the Juvenile Diabetes Foundation International and the American Diabetes Association, Dr. Trucco and his staff will be able to communicate with staff from other diabetes research centers that are approaching the same problems using different methods. This way, whatever is learned at one lab can be shared with all the centers and positive advances can be implemented worldwide immediately.

Collaboration with other diabetes research centers is a big part of Dr. Trucco's overall plan. In fact, with support from the U.S. Army, Dr. Trucco is planning a project with the Joslin Diabetes

Center in Boston to bring the same quality care available to patients in Pittsburgh to less fortunate patients around the country, specifically native Alaskans and native Americans in the southwest.

"We're trying to use tele-medicine to help people across the country manage their disease better," explains Dr. Trucco. "Our hope is that one day we'll be able to put a patient in front of a video camera in Alaska or anywhere else and an experienced doctor in Pittsburgh will decide what to do or what not to do. That way, we don't have to multiply the expertise because we can export it far away using high speed electronic communication."

The Real Mission

The pediatric division of the new University of Pittsburgh Diabetes Institute also will serve another important function. As Dr. Trucco's lab attracts more attention, people will hear about the research being done and they will learn about diabetes. When that happens, Dr. Trucco hopes that children who have the disease won't feel so isolated.

Right now, with proper implementation of doctor-recommended therapy, individuals with type 1 diabetes can live a relatively normal life. With the research being conducted in Dr. Trucco's lab, its new talent and its lofty goals, even better things are sure to come.

"If we can help some of these kids feel better or solve even a part of their problem, we will improve their lives and that's all the satisfaction I need," says Dr. Trucco. "Besides an outright cure, that's all I'm looking for."