



MOUNT SINAI
SCHOOL OF
MEDICINE

The Center for Molecular Cardiology



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Children with Heart Disease

Congenital heart defects constitute a significant health problem in the United States. These abnormalities occur in nearly 1 of 100 babies and are the leading cause of death in infancy and early childhood. In addition to those born with heart defects, another segment of the pediatric population will develop heart muscle or vessel weakness as children.

Significant advances in treatment and surgery extend the lives of many of these babies. But, unfortunately, the problems associated with these abnormalities do not end in early childhood. Those children who survive into adolescence or adulthood face additional health issues: associated disabilities and life-threatening complications can emerge, and, for those contemplating parenthood, concern that these abnormalities may be passed on to the next generation.



Molecular Research— Hope for the Future

The best hope for prevention and treatment of these devastating illnesses lies in scientific study. Rapid advances in molecular research methods, especially the completion of the sequencing of the human genome, have provided the tools to unravel the mysteries of why these birth defects occur and which children will be affected. Investigators at Mount Sinai have been at the forefront of these efforts with significant accomplishments that include:

- Discovery of the gene for Marfan syndrome, a disease of the connective tissue that affects the heart and blood vessels, among other systems
- Discovery of two genes for Noonan syndrome, a condition in which multiple body parts develop abnormally
- Discovery of a gene that causes patent ductus arteriosus, a common heart defect in which a blood vessel that allows blood to bypass the lungs in the womb, fails to close after birth.

These discoveries have led to improved care for affected individuals and their families, including more accurate and rapid diagnosis through gene testing. In addition, molecular research has led to the development of a new therapy for Marfan syndrome that is currently in clinical trials.



Dedicated to Prevention, Treatment and Cure

The Center for Molecular Cardiology (CMC) was launched in the spring of 2006, with the mission of promoting basic and clinically relevant research on congenital heart defects in children. Drawing on the research strengths at Mount Sinai School of Medicine, the Center is unique in its scope and scale.

Under the leadership of founding scientific director, Bruce D. Gelb, MD, a pediatric cardiologist who specializes in cardiovascular genetics and heart transplantation, the Center is accomplishing its mission by supporting and facilitating:

- Important discoveries that uncover the causes of congenital and acquired heart problems of childhood
- Translating laboratory-based findings into healthcare strategies to improve the lives of children with heart problems
- Training future generations of scientists and physician-scientists to pursue state-of-the-art research relevant to cardiovascular diseases of childhood
- Educating physicians and other health care professionals, medical and graduate students, families impacted by these disorders, and the general public.

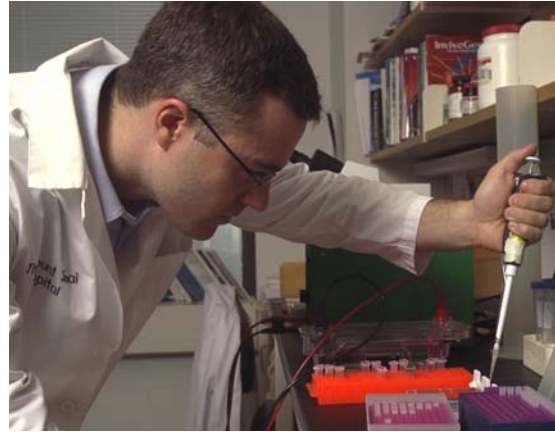


Maximizing the Research Environment

CMC scientists require extensive infrastructure to support their research efforts, including equipment specific to cardiovascular research in the Center, as well as that which supports state-of-the-art genetic/genomic, proteomic, and imaging studies throughout the institution. Researchers in the CMC work closely with numerous physician-scientists and scientists from the Mount Sinai School of Medicine who provide expertise in cutting-edge biomedical science such as human genome research, stem cell biology and gene therapy. The Mount Sinai Hospital provides an outstanding environment for the rapid translation of laboratory discoveries to the patient's bedside—including the NIH-funded clinical research center.

Our Facilities

The CMC is located on The Mount Sinai Medical Center campus on Manhattan's Upper East Side. The Center occupies the Atran-Berg Building's 3rd floor, 13,000 square feet of new research space that was designed specifically for its mission by a prominent New York City architectural firm. To promote collaborative interactions among the scientific groups, the layout features laboratories without walls and conferencing space. This construction was made possible by a generous gift from the Saul Family.



Supporting Our Mission— Investing in the Future

Mount Sinai's commitment to the CMC and its mission provides a unique opportunity to advance research in the field with a large cadre of physician-scientists and scientists, all working toward a targeted goal: improving the outlook for children and families with heart defects. By assembling outstanding investigators employing a variety of scientific approaches, breakthroughs are being facilitated and accelerated.

But the task ahead is challenging. The Center must raise \$20 million in philanthropy from individuals, foundations, and corporations if we are to continue to recruit outstanding faculty, train promising young scientists, develop our infrastructure and continue down our most creative new scientific avenues.

If you are interested in learning more about how you can assist us in our mission, please contact:

The Mount Sinai Development Office
Telephone: 212-659-8500