MAYO CLINIC CENTER FOR BIOMEDICAL DISCOVERY

EXCEPTIONAL RESEARCH LEADS TO EXCEPTIONAL PATIENT CARE
THE RESEARCH WE DO TODAY WILL DETERMINE THE TYPE OF MEDICAL AND SURGICAL PRACTICE WE CARRY ON AT THE CLINIC TOMORROW.

- WILLIAM J. MAYO, M.D.
In medical practice, we provide the best choice of treatment based on current knowledge. Unfortunately, we do not always have a full understanding of the root causes of disease or the mechanisms that drive the treatments provided. At Mayo Clinic, we’re assembling expert, state-of-the-art biomedical research teams to define the cellular and molecular basis of disease. We can summarize these mechanisms as the “essence” of disease. Our research teams create a core scientific knowledge that will drive the diagnostics, treatments and cures of tomorrow to provide the best care for you and your family.

By understanding the essence of disease, we can work towards stopping it in its tracks, preventing it with greater success or eradicating it with greater precision. The discoveries needed to make those advances require nimbleness, passion and a diversity of approaches. This is possible at Mayo Clinic as we align scientists who have an extraordinary depth and breadth of world-class scientific expertise with their clinical colleagues. The Center for Biomedical Discovery provides a critical starting point for these efforts to solve our most pressing public health issues in ways that haven’t previously been considered.

The possibilities for discovery have never been greater, and the work involved has never been more complex. Multidisciplinary team science is needed now more than ever. The Center for Biomedical Discovery has the expertise to provide the foundation for medicine that understands the human body and how it works at a fundamental, molecular and cellular level to give you exactly the care you need.

YOUR PARTNERSHIP ACCELERATES MAYO CLINIC’S EFFORTS TO DEVELOP, REFINE AND IMPROVE NEW WAYS TO TREAT PATIENTS ... HELPING ANSWER THE “WHY” AND “HOW” OF DISEASE.
A DISTINCTIVE, TEAM-BASED STRATEGY TO CURE DISEASE

Many biomedical research centers offer expertise in isolated aspects of biotechnology and patient care, but often these approaches are unconnected or disorganized, and lack focus. The Center for Biomedical Discovery takes a different approach by assembling comprehensive, multidisciplinary teams of exceptional scientists, engineers, technicians, geneticists and physicians to understand and treat disease. This team approach draws from our many strengths and has yielded important outcomes in a more efficient and rapid manner.

The Center for Biomedical Discovery is leveraging Mayo Clinic’s world-class biomedical research faculty, technology and infrastructure — in addition to our gold standard of patient care — to take a distinctive approach:

- **Understanding the basic mechanisms leading to diseases** that afflict all organs by focusing on fundamental questions. These include how disease arises as a result of defects in cell aging, fibrosis (scarring), metabolism (alterations in body chemistry), obesity, inflammation, immunity (body’s resistance to assault from inside or outside the body) and cell growth (as in tumors).

- **Developing new drugs, therapies, and devices** based on an understanding of the molecular and cellular “essence” of disease to provide more effective treatment.

- **Synergizing with Mayo Clinic’s leaders in research and care delivery** to exchange ideas and information that will enhance personalized care.

- **Creating multidisciplinary teams of experts** that are custom-made to solve the most complex and consequential problems — just like we do with patient care.
COMPREHENSIVE TEAMS OF EXCEPTIONAL SCIENTISTS, ENGINEERS, TECHNICIANS, GENETICISTS AND PHYSICIANS WORK TOGETHER TO UNDERSTAND AND TREAT DISEASE FROM MULTIPLE DIRECTIONS, FORMING ROADMAPS THAT LEAD TO ANSWERS AND BREAKTHROUGH DISCOVERIES.
OBESITY IS MORE THAN SKIN DEEP: UNLOCKING THE MECHANISMS OF METABOLISM

Our evolution as humans, diet and environment impact how we use and store the calories we consume. The Western diet appears to be exploiting a preference in human biology for the conservation of energy in “times of plenty.” This is leading to accelerated rates of obesity with higher incidence of fatty liver, diabetes and heart disease at an earlier age. The sobering reality is that today’s younger generation may not live as long as their parents if this trend continues unchecked. We are beginning to unlock the mechanisms of cellular metabolism that drive the acceleration of obesity-related diseases and develop new approaches to prevent and treat diseases that affect so many of us at all ages.

STARVING CANCER CELLS TO DEATH: MAYO RESEARCH TEAM WORKS TO CUT OFF THE ENERGY SUPPLY USED BY MOST TUMORS

Where do tumor cells get the energy to divide non-stop while moving and invading other organs? This is an important question, and a team of Mayo Clinic discovery scientists is working to understand how tumor cells generate so much energy to grow and metastasize. Importantly, their new insights have led to the uncovering of new metabolic pathways. Drugs in clinical trials are aimed at disrupting these pathways in breast and pancreatic cancers. These therapies have led to promising results toward literally “starving cancer cells to death.”
YOUR SUPPORT CAN MAKE PATIENT-INSPIRED INNOVATION HAPPEN EVEN FASTER. JUST ONE PERSON CAN SPARK AN INNOVATION THAT TOUCHES MILLIONS OF LIVES.
ABOUT THE CENTER FOR BIOMEDICAL DISCOVERY AND THE FOCUS ON TEAM SCIENCE

Mayo Clinic launched the Center for Biomedical Discovery to initiate and accelerate team science with the greatest promise to make the biggest impact on the largest number of patients. By focusing on the molecular and cellular basis of disease, the center seeks to understand abnormal processes that span all organ systems leading to most human diseases. Excellence in team-based science provides the foundation for excellence in team-based medicine. Thus, the Center for Biomedical Discovery provides an extraordinary opportunity to strengthen and advance what Mayo Clinic offers to patients as a global destination for complex care.