This is an era of amazing advances in biomedical science, especially in molecular biology and genomics. Cloning and genome sequencing are spectacular recent examples.

But advances in clinical care have not kept pace with the rate of basic science breakthroughs. Some of the gap is inherent in the process of science. Some is the result of unrealized potential in the way we conduct the work that turns discoveries into new medical tests, treatments and cures.

No matter how long the climb, discovery is a moment, like cresting a hill. In medicine, developing the explorer’s discovery into clinical uses is necessarily slower, more like settling new territory. The basic scientist pursues hypotheses that lead, one after another, to new knowledge. Clinical and translational scientists are concerned with the complexities of living systems, with patients in clinical trials, with scale. That will always be so.

Nonetheless, the work of the clinical and translational sciences can be made more productive. In an effort to narrow the gap between discovery and cure, the National Institutes of Health has made clinical and translational sciences a national priority.

Progress toward strong translational science has been impeded by several issues, including:

- Lack of funds dedicated to moving discoveries toward clinical uses
- The breadth of knowledge required to translate basic science into clinical uses
- Specialization in biomedical sciences, which makes it less likely that specialists will see clinically useful connections across specializations
- No natural home for translational sciences among the biomedical specialties
- No training path for preparing a cadre of translational scientists

The University at Buffalo School of Medicine and Biomedical Sciences built the Clinical and Translational Research Center and is investing in this kind of research to put discovery to work—to translate the genius of science into interventions that improve health.

That is why we are seeking philanthropic partners to join this effort to influence the future course of medicine.
Eighth floor
- Toshiba Stroke and Vascular Research Center
- Research angiography suite
- Laboratories and offices for up to six investigative groups

Seventh floor
- Laboratories and offices of the Center for Research in Cardiovascular Medicine, an interdisciplinary research center directed by John M. Canty Jr., Albert and Elizabeth Rekate Chair in Cardiovascular Disease, who has led pioneering studies on the mechanisms involved in sudden cardiac death.
- Translational cardiovascular imaging facility including a GE Discovery PET/CT 690 dedicated exclusively for research purposes, which will advance preclinical and clinical translational molecular imaging.
- Lab-animal facility
- Conference and collaboration space

Sixth floor
- Clinical Research Center: The center coordinates clinical research activities among institutions in the Buffalo Translational Consortium. The center also maintains facilities for examining subjects and collecting samples.
- Biorepository
- Laboratories and offices for up to 12 investigative groups. These include the Timothy Murphy group (respiratory infections and vaccine development), the Animesh Sinha group (immunological tolerance and autoimmunity), and the Kinga Szigeti group (Alzheimer’s disease)
- Conference/collaboration rooms

Fifth floor
- Conference center and seminar rooms
- Atrium café
- Conference facilities large enough for national meetings on special topics
- Collaboration space
- Administrative offices
- UB Biosciences Incubator
- Jacobs Institute, conducting research and development and training in vascular medicine, directed by L. Nelson Hopkins, professor and chair of neurosurgery at the school of medicine. This center within the CTRC will focus on innovation in medicine and entrepreneurship in the development of those innovations.

CTRC FEATURES
- Modern, open-architecture laboratories and support space for up to 31 principal investigators.
- Clinical Research Center with nine examination rooms.
- Biorepository where researchers will store and catalog valuable tissue samples to study a wide variety of disease conditions. The biorepository is supported by the university’s world-class informatics resources.
- State-of-the-art research imaging facilities including magnetic resonance imaging, computed tomography and positron emission tomography.
- UB Biosciences incubator, aiding UB researchers in the creation of medical products and businesses spun off from UB faculty research.
RESEARCH CONNECTIONS

More than laboratories

The Clinical and Translational Research Center is more than its laboratories and meeting places: it is a hub for the clinical and translational research programs of the institutions that comprise the Buffalo Translational Consortium.

Created during the planning for the CTRC, the consortium includes the five UB health sciences schools, Kaleida Health, Erie County Medical Center, Roswell Park Cancer Institute, the medical school’s faculty practice group, and other leading Buffalo medical research institutes and centers.

Consortium members are national leaders in biomedical informatics and ontology, behavioral health research, cancer research, community-based research, research in cardiovascular disease and pharmaceutical sciences.

The Clinical Research Center in the CTRC will assist consortium researchers with technical issues ranging from research design consultation to regulatory support. The Clinical Research Center will further support CTRC researchers with expertise in human research, including conducting clinical trials, study design and planning, recruitment of participants, conducting study visits, retaining participants in studies and assessing study outcomes.

By sharing expertise, the consortium research community will bridge gaps between disciplines of biomedical science and the healing interventions of clinical medicine.

BUFFALO CTRC

The opportunity and the challenge

Like the University at Buffalo, the CTRC is ideally positioned to realize the benefits of the public-private funding partnerships for major research and education initiatives.

Even before the first researchers moved in, the CTRC was already attracting top physician-scientists to the medical school’s faculty. John E. Tomaszewski, for example, who was president of the American Society of Clinical Pathology and interim chair of the Department of Pathology and Laboratory Medicine at the University of Pennsylvania, joined the UB medical school faculty in 2011 as chair of the Department of Pathology and Anatomical Sciences because, he said, the combination of the biorepository facility in the CTRC and UB’s computational infrastructure offered an unparalleled opportunity to further his work.

The completed, fully equipped CTRC represents a $150 million commitment from all sources. New York State has already invested approximately $125 million in building and equipping of the center. The university’s medical science schools and its public- and private-sector partners in the Buffalo Translational Consortium have committed to coordinating their clinical and translational research programs.

Private support for the CTRC—eventually providing $25 million—will make the center the leading producer of translational outcomes it is designed to be.

A NEW MEDICAL CAMPUS FOR A NEW CENTURY

Unlimited possibilities

Beginning in 2005, the administration and faculty of the University at Buffalo developed a strategic plan—eventually called UB 2020—to accelerate UB’s rise in prominence as a national research university and center for graduate and professional education.

Academic excellence is UB 2020’s guiding principle. Everything in the strategic plan—from the configuration of the university’s three campuses to strategic investment in certain of its schools and research areas to the size of the faculty—promotes excellence in education and in research.

The centerpiece of UB 2020 is the university’s bold decision to build a new, larger medical school in downtown Buffalo adjacent to the Buffalo General Medical Center, Roswell Park Cancer Institute and a new Women and Children’s Hospital. The Clinical and Translational Research Center is a key component of the new medical school campus.

Construction begins in 2013. The new medical school will open its doors in fall 2016 to a new era of medical education, health care and biomedical research in Buffalo.