or more than five decades, Albert Einstein College of Medicine has responded to the changing landscape of biomedical research with a commitment to improving human health.

Einstein’s research has advanced our understanding of some of the most pressing health problems and debilitating diseases that affect humanity, and we continue to train and educate the next generation of physicians and scientists. Through the years, we have taken advantage of new opportunities to enhance and advance the excellent research conducted every day on our campus and abroad.

Today, rapid changes in medicine require dynamic, collaborative, interdisciplinary approaches to research, with the goal of creating practical applications for the community. Progress in biomedical research in the 21st century calls for cross-disciplinary, bidirectional research that translates basic science discoveries from the laboratory to the clinic, and back again. At the same time, the pharmaceutical industry has slowed its own research and development of new drugs, resulting in a significant reduction in potential new treatments coming to market. This makes our work in developing new therapeutics even more crucial.

To meet the shifting needs of research, we have embarked on a new chapter of growth and transformative change. With the guidance and full support of our Board of Overseers, we have spent the last seven years implementing key initiatives from a Campus Master Plan and a Strategic Research Plan, living documents that identify specific courses of action to provide Einstein with the resources and tools needed for this rapidly changing environment.

During this period, Einstein launched major initiatives to begin a transformation of the institution through physical renovations and repurposing, creation of specialized centers, recruitment of top faculty, and enhanced medical education. Progress with these initiatives has already reshaped Einstein into the collaborative, cross-disciplinary research institution we envisioned.

As we look to the future, we must build upon our success and continue to enhance Einstein’s ability to focus on health areas of high national priority. The changes of the last seven years have positioned Einstein to now focus on several innovative initiatives, including a Center for Experimental Therapeutics, a Genomic Sequencing Initiative, an Institute for Brain Research, and an Education Center, as well as the additional recruitment of key faculty members to grow Einstein’s team of talent and lead the exciting research and education projects of the future.

Thanks to several key resources—state-of-the-art technology, specialized facilities dedicated to priority research, and the most efficient and forward-thinking faculty to fulfill our mission and accelerate progress in critical areas of medicine—the next phase of Einstein’s transformation will close the gap between discovery and treatment.

We invite you to join us on this journey that will transform Einstein and help expedite new discoveries in medicine.

Allen M. Spiegel, M.D.
The Marilyn and Stanley M. Katz Dean

Ruth L. Gottesman, Ed.D.
Chair, Einstein Board of Overseers

Dear Friends,

THE CAMPAIGN TO TRANSFORM EINSTEIN

ALBERT EINSTEIN COLLEGE OF MEDICINE
EINSTEIN AT A GLANCE
742 M.D. students
245 Ph.D. students
116 Medical Science Training Program students
360 postdoctoral research fellows
2,000+ full-time faculty members (includes affiliates)
8,000+ alumni
9 NIH/HHS–Designated Centers

KEY PARTNERS
Montefiore, the University Hospital and academic medical center for Einstein
Jacobi Medical Center
Maimonides Medical Center
Bronx-Lebanon Hospital Center
St. Barnabas Hospital
North Shore–Long Island Jewish Health System
Beth Israel Medical Center

1953:
Albert Einstein grants his name to the Albert Einstein College of Medicine

1960s:
Establishment of several centers, including the Rose F. Kennedy Intellectual and Developmental Disabilities Research Center and the Belfer Institute for Advanced Biomedical Studies

1980s:
The Jack and Pearl Resnick Gerontology Center and the first Center for AIDS Research are established; two of Einstein’s professors are awarded the National Medal of Science

Early 2000s:
The Gruss Magnetic Resonance Research Center opens; plans for the Michael F. Price Center for Genetic and Translational Medicine/Harold and Muriel Block Research Pavilion are underway

1990s:
NIH establishes the General Clinical Research Center at Einstein; the Fisher Landau Center for the Treatment of Learning Disabilities is established
In 1945, Dr. Samuel Belkin, then the president of Yeshiva University, envisioned the creation of a new medical school that would provide rigorous medical training with altruistic purpose. His vision became a reality when the University broke ground for Albert Einstein College of Medicine in October 1953, with the first class of 56 medical students entering in 1955.

Einstein quickly became a premier, research-intensive medical school dedicated to innovative biomedical investigation and to the development of ethical and compassionate physicians and scientists. Inspired by the words of our namesake, we have always welcomed students, faculty, and staff from diverse backgrounds who strive to enhance human health in the Bronx community and beyond.

Einstein has spent decades pioneering critical biomedical research and educating the next generation of scientists in its mission to improve human health. Home to one of the largest residency and fellowship training programs in the United States, Einstein is at the forefront of medical progress that impacts the lives of populations worldwide. With their dedication to science and to humanity, Einstein researchers and students forge new discoveries through a collaboration of the brightest minds in the field, guided by their ethical and moral understanding and practice of medicine. This approach is the unique foundation for everything that happens at Einstein and is reflected in our motto: Science at the Heart of Medicine.
IMPROVING HUMAN HEALTH THROUGH RESEARCH AND EDUCATION

PIONEERING DISCOVERY

Driven by Einstein’s mission, our scientists have played a key role in important scientific discoveries and clinically relevant breakthroughs. Significant advances resulting from Einstein research include:

Aging: Discovery of the first two “longevity genes” ever identified in humans.

Cancer: Discovery of the mechanism of Taxol, one of the most significant antitumor drugs of the past two decades, used in the treatment of lung, ovarian, breast, and head and neck cancers.

Infectious Disease: Identification of pediatric AIDS as a distinct disease, and establishment of the first daycare in the world for children with AIDS.

Cardiovascular Disease: Major contributions to the understanding of how the heart muscle works. Einstein researchers also played critical roles in developing the first transvenous pacemaker and beta-blocker drugs now commonly used for treating hypertension and heart failure.

Einstein’s research prowess has also been recognized by its selection in global projects funded by the National Institutes of Health (NIH). Einstein was the only New York City medical school selected by the NIH to participate in the federal government’s landmark Women’s Health Initiative, the largest research study of women’s health ever undertaken. And in recognition of its outstanding research capabilities, Einstein was the only institution in New York City involved in the federally funded mapping of the human genome.

Einstein’s participation in these important initiatives reflects its distinct role as a premier research institution.
TRAINING AMERICA’S FUTURE PHYSICIANS AND SCIENTISTS

Educating the next generation of physicians and scientists is at the heart of Einstein’s mission. Since its inception, Einstein has attracted bright and humanistic students driven by intellectual curiosity and altruism. Our students are exposed to a unique curriculum that combines academic rigor with an emphasis on ethics and professionalism, resulting in a distinctively Einstein product: outstanding and successful physicians and scientists highly attuned to the sensitivities and needs of modern culture and diverse ethnic groups.

As one of only four medical schools in New York to offer a master’s-level program in bioethics, Einstein also touches a variety of constituents beyond medical students; physicians, nurses, and lawyers from around the state come to Einstein to learn about major bioethical issues.

Among its pioneering educational initiatives, Einstein was one of the first major medical schools to integrate bedside experience with learning, bringing first-year students into contact with patients and linking classroom study to case experience. Einstein also led the way in the development of bioethics as an accepted academic discipline in medical school curricula, was the first private medical school in New York City to establish an academic department of family medicine, and was the first to create a residency program in internal medicine with an emphasis on women’s health.

“Einstein has one of the strongest M.D./Ph.D. programs in the country and it’s one of the best established, which were major attractions for me. I rotated through four labs before I chose the lab of my mentor, Dr. Kartik Chandran. When I met Dr. Chandran, within five minutes we were throwing ideas at each other and drawing figures on whiteboards. It led me to believe that his would be the right lab for me.”

— Tony Wong, M.D., Ph.D. ’12
Albert Einstein was both a great thinker and a great humanist who emphasized that concern for humankind and its fate is the reason for all technical endeavors. He would be proud to see how Einstein students and faculty are helping the people of the world, from nearby Bronx neighborhoods to underserved communities overseas. Einstein imbues the values of altruism, compassion, humanism, and collaboration in its students and faculty, and within the innovation that stirs in the research laboratories and on campus every day.

Students at Einstein reflect these values in their work with communities in need, not only in their local neighborhood but across the globe in underdeveloped countries. Through Einstein’s Global Health Center, students have the unique opportunity to engage in vital work conducted in impoverished nations. With 28 initiatives worldwide and programs in 10 countries, the Global Health Center enables Einstein faculty and students to focus on improving health conditions in some of the neediest global communities while providing students with unparalleled experiential learning and understanding of sociological and economic health factors.

Einstein scientists also partner with colleagues and institutions worldwide to alleviate suffering and to improve lives. The Einstein Global Diabetes Initiative, spearheaded by Meredith Hawkins, M.D., works in partnership with the Christian Medical College in Vellore, India, to bring diabetes education and treatment to neglected countries and to export clinical training programs to Nepal and Bangladesh. In addition, Einstein is working with Makerere University in Uganda to develop a formal training program in endocrinology and provide advanced training in diabetes, helping to retain highly needed doctors in the country. Betsy Herold, M.D., and Marla Keller, M.D., strive to develop better vaginal microbicides to protect women worldwide against HIV. In Rwanda, a program directed by Kathy Anastos, M.D., has helped 6,000 HIV-positive people, particularly women infected with HIV through genocidal rape.

These global initiatives represent just a few of the projects that Einstein researchers pursue as part of their commitment to improving health worldwide.
COLLABORATIVE PARTNERSHIPS

In collaboration with its partners, Einstein runs one of the largest residency and fellowship training programs in the United States, educating students with formal research and clinical skills. These affiliations create unique opportunities for Einstein researchers to collaborate with their clinical counterparts.

Einstein’s partnership with Montefiore, its University Hospital and academic medical center, includes four jointly run Centers of Excellence and is further strengthened by the dual appointments of faculty and physicians across both institutions—enhancing synergies and collaborations for research, teaching, and patient care.

In 2009, a historic agreement between Einstein and Montefiore codified shared responsibilities for a joint clinical and translational research enterprise. This historic partnership increases the focus on critical bench-to-bedside research, through which discoveries in Einstein’s laboratories lead to therapies and treatments for patients on an accelerated timetable.
IMPACT WITH EFFICIENCY

HIGH IMPACT
The impact of research at Einstein has always been disproportionately high relative to the size of the College of Medicine’s faculty and resources. Out of 139 medical schools, Einstein ranked 27th in terms of total funds secured from the NIH in 2012. This placement is remarkable, given Einstein’s size compared to distinguished institutions ranked both ahead of and behind it. According to an annual survey of medical schools, Einstein faculty members bring in more than $160 million in NIH funding, equivalent to the amount granted to institutions with nearly twice as many research faculty members.

With fewer investigators, the impact of research conducted by Einstein scientists is significant; each principal investigator creates immense value to the organization and to his/her field of research per dollar spent. Einstein faculty members are leaders in many areas of research, recognized not only through the amount of NIH funding received every year, but also by the nine NIH/Health and Human Services–Designated Centers at Einstein.

RESOURCEFULNESS
By repurposing space in creative and thoughtful ways, Einstein utilizes its resources as efficiently as possible while maintaining state-of-the-art technology. Einstein’s adaptive reuse of existing facilities for new institutes and programs simultaneously lowers its cost per square foot while engineering the most efficient arrangements for lab work and other essential elements for innovative and collaborative research.

Compared to the average industry cost of $1,000 per square foot of lab space, Einstein’s capital investments cost approximately $350 per square foot as a result of in-house labor and creative restructuring. This strategic reuse of facilities enables Einstein to invest more dollars in critical research and recruitment of top faculty, maximizing the impact of every investment.
THE CAMPAIGN TO TRANSFORM EINSTEIN
AN UNPRECEDENTED ERA

2006

Allen M. Spiegel, M.D., named dean of Einstein

2007

Launch of Strategic Research Plan

Ruth L. Gottesman, Ed.D., named chair of Board of Overseers

2008

Dedication of Michael F. Price Center for Genetic and Translational Medicine/Harold and Muriel Block Research Pavilion, and recruitment of 14 initial investigators

First Campus Master Plan developed

2009

Marilyn and Stanley M. Katz Comprehensive Cancer Prevention and Control Program established

NIH grants Einstein and Montefiore a coveted Clinical and Translational Science Award, limited to top academic medical centers around the country, and one of several new NIH centers granted to Einstein during this period

2010

Wilf Family Cardiovascular Research Institute established

2011

EGL Integrated Imaging Program established

NIH awards Einstein a $5.7 million grant to support basic science research and clinical practice at the Rose F. Kennedy Intellectual and Developmental Disabilities Research Center

2012

Historic Einstein-Montefiore affiliation agreement signed

Ruth L. Gottesman Clinical Skills Center opened

Judy Aschner, M.D., nationally recognized leader in neonatology and pediatrics, recruited as professor and University chair of pediatrics at Einstein and physician-in-chief of The Children’s Hospital at Montefiore

Director of the Ruth L. and David S. Gottesman Institute for Stem Cell and Regenerative Medicine Research appointed and new faculty recruited

Einstein designated an NIH Nathan Shock Center of Excellence in the Basic Biology of Aging, one of only five such centers in the U.S.
A NEW CHAPTER

Dean Spiegel’s arrival in 2006 marked the beginning of a new chapter for Einstein. While the mission to improve human health worldwide would remain core to Einstein, the landscape of biomedical research was shifting. Massive amounts of data and powerful new research techniques provided new opportunities that required research groups different in scale from traditional individual investigator labs. Additionally, translating discovery into applicable medicine required closer integration of basic and clinical research.

These changing trends in research called for a revolutionary transformation of Einstein, guided by a Strategic Research Plan and a Campus Master Plan that would work together to provide the roadmap for Einstein’s future, both physically and programmatically. With engagement by the Board of Overseers and Einstein faculty from across the research spectrum, these plans identified key priority areas and outlined the fundamental vision for a new era of unprecedented growth at Einstein.

STRATEGIC FOCUS

Emphasize collaboration and synergies between basic and clinical investigators; 
Train the next generation of physicians and scientists; and 
Improve the health of the people of the Bronx, the nation, and the world.

Driven by this vision and the far-seeing philanthropists who supported it, Einstein set out to enhance its ability to produce innovative research and education, especially through the following areas:

1) Efficient revitalization of physical space;
2) Focused development on key areas of medicine, fueled by the recruitment and retention of the best talent; and
3) Enhanced education and training for the next generation of physicians and scientists.
The most visible change at Einstein was the significant repurposing of space on campus, to make it as efficient and supportive as possible to the changing needs of research.

To create the infrastructure needed for successful translational research, Einstein first expanded its campus by ten acres and built the Michael F. Price Center for Genetic and Translational Medicine/Harold and Muriel Block Research Pavilion, a signature facility dedicated in 2008 that came to symbolize the changes coming to Einstein.

Through physical expansion and the repurposing of several facilities, Einstein continued to reshape its campus to foster high-priority research programs.

In 2009, Einstein obtained the building formerly known as Van Etten Hospital from Jacobi/Bronx Municipal Medical Center, bringing more than 350,000 usable square feet for clinical, educational, research, and computational facilities, and thus potentially freeing up space for vitally needed research labs. The Van Etten Building is a key element in Einstein’s Campus Master Plan.

In the months and years to come, Einstein will continue to transform and strategically reinvent thousands of square feet in Van Etten, the Harold and Muriel Block Building, and other notable spaces on campus into research facilities and centers, to further enhance collaboration, increase opportunities for lab work, and encourage new discoveries through team-based research.
John Blanchard, Ph.D., has identified a promising new treatment for extensively drug-resistant tuberculosis (XDR-TB), a dangerous form of the disease caused by strains of TB bacteria that have become resistant to virtually all antibiotics. In 2009, Dr. Blanchard reported that a combination of two drugs (clavulanate and meropenem) was highly effective in halting the growth of XDR-TB in laboratory culture. Since then, his drug combination has saved the lives of several patients with XDR-TB and will soon be formally evaluated in two human trials, in South Africa and Belgium. Dr. Blanchard is professor of biochemistry and the Dan Danciger Professor of Biochemistry.

Arturo Casadevall, M.D., Ph.D., is one of the world’s leading microbiologists, well known for his diverse and innovative scientific inquiries. His work on fungal melanin, for example, has opened up the possibility of using this pigment in novel ways to protect against radiation exposure. Thanks to a highly productive research partnership with colleague Ekaterina Dadachova, Ph.D., he has developed a targeted therapy for metastatic melanoma that has shown promise in human clinical trials. Dr. Casadevall is professor and chair of microbiology & immunology, professor of medicine (infectious diseases) and the Leo and Julia Forchheimer Chair in Microbiology and Immunology.

John Condeelis, Ph.D., is a leading expert on imaging the tumor microenvironment—the microscopic site where tumor cells interact with surrounding cells. He has found that breast cancer spreads only when a specific trio of cell types is present together in the tumor; this “signature” for potential breast cancer metastasis has been validated in breast cancer patients. A company has licensed Einstein’s patent on Dr. Condeelis’s discovery and is developing a diagnostic test for pinpointing which breast cancer patients need aggressive therapy to prevent their cancer from spreading. Dr. Condeelis is professor and co-chair of the anatomy and structural biology department, scientific director of the analytical imaging facility, co-director of the Gruss Lipper Biophotonics Center, and the Judith and Burton P. Resnick Chair in Translational Research.

Ekaterina Dadachova, Ph.D., is a nuclear medicine expert who has done pioneering work using radioimmunotherapy, a technology in which radioisotopes are piggybacked onto antibodies. After the antibodies deliver the radioisotope to a specific target such as a cancer cell or disease-causing microbe, the radioisotope delivers a lethal dose of radiation. In partnership with Einstein colleague Arturo Casadevall, M.D., Ph.D., Dr. Dadachova developed radioimmunotherapy for metastatic melanoma—a treatment strategy that has shown promise in human clinical trials. In a project supported by the Bill and Melinda Gates Foundation, Drs. Dadachova and Casadevall are also developing a radioimmunotherapy strategy with the potential for treating or perhaps even curing HIV/AIDS by targeting HIV-infected cells. In other novel applications of targeted therapy, Dr. Dadachova is testing radioimmunotherapy against antibiotic-resistant microbes and as a treatment for virus-caused cancers such as cervical cancer and
Disease, autism and allergies. Cancer, diabetes, Huntington’s human diseases including breast abnormalities that underlie stem cells and of the epigenetic led to a better understanding. Dr. Greally’s research has genes and affect their expression. study of chemicals that attach to epigenomics, which involves the is a leader in the field of Cancer Research. Sylvia and Robert S. Olnick Faculty Scholar in Cancer Research.

**John Greally, M.B., B.Ch., Ph.D.**

is a leader in the field of epigenomics, which involves the study of chemicals that attach to genes and affect their expression. Dr. Greally’s research has led to a better understanding of the epigenetic regulation of stem cells and of the epigenetic abnormalities that underlie human diseases including breast cancer, diabetes, Huntington’s disease, autism and allergies. Since epigenetic changes are reversible, his work in identifying epigenetic abnormalities could lead to novel therapies for these conditions. Dr. Greally is professor of genetics, of medicine (hematology), and of pediatrics, and the Faculty Scholar for Epigenomics.

**Joseph Sparano, M.D.** is a leading clinical oncologist who is working to tailor breast cancer treatment to individual patients. He is associate chair for disease-oriented research in the Eastern Cooperative Oncology Group (ECOG), which conducts clinical trials in all types of adult cancers and is one of the country’s largest cancer research organizations. He directs ECOG’s nationwide clinical trial to determine which women with early-stage breast cancer are likely to benefit from chemotherapy intended to prevent cancer recurrence. Dr. Sparano is professor of medicine and of obstetrics & gynecology and women’s health and co-leader of the Breast Cancer Working Group of the Albert Einstein Cancer Center.

**Vern Schramm, Ph.D.** has pioneered a technology for identifying highly potent inhibitors of enzymes that play key roles in human diseases. Using this technology, he has developed enzyme-inhibiting drugs now being tested by Einstein licensees in phase 2 clinical trials for T cell lymphoma and gout. Other clinical-trial candidates are drugs developed by Dr. Schramm that target malaria, head and neck cancer, and antibiotic-resistant bacteria. Dr. Schramm was elected to the National Academy of Sciences in 2007 and is professor and chair of the biochemistry department and the Ruth Merns Chair in Biochemistry.

**Ulrich Steidl, M.D., Ph.D.**

studies the molecular pathways that lead to the development of leukemia. He recently identified a key protein responsible for causing acute myeloid leukemia, a particularly lethal and poorly treated form of cancer. He is now developing drugs that target and inactivate this protein—an entirely new approach to leukemia treatment. Dr. Steidl is assistant professor of cell biology and of medicine (oncology) and the Diane and Arthur B. Belfer Faculty Scholar in Cancer Research.

**Ana Maria Cuervo, M.D., Ph.D.** is one of the world’s leading authorities on autophagy, a “garbage disposal” system that cells use to dispose of and recycle their worn-out molecules. Dr. Cuervo’s research has shown that glitches in autophagy play a role in numerous diseases (including Parkinson’s and Huntington’s) as well as in age-related conditions such as organ decline and weakened immunity. She is now screening for drugs that would normalize autophagy as a novel approach for treating or even preventing such problems. Dr. Cuervo is professor in the departments of developmental and molecular biology, of anatomy and structural biology, and of medicine (gastroenterology and liver diseases), and the Robert and Renée Belfer Chair for the Study of Neurodegenerative Diseases.

**Joe Verghese, M.B.B.S.** is an expert on aging who studies how diseases and aging affect cognitive ability and mobility in older adults. He has shown that older people who engage in brain-stimulating activities, such as training in treadmill walking, that can improve gait in frail older adults. Dr. Verghese is professor and director of the division of neurology, a professor of medicine (geriatrics) and division chief of geriatrics, the Saul R. Korey Department of Neurology, a professor of medicine (geriatrics) and division chief of geriatrics, the Murray D. Gross Memorial Faculty Scholar in Gerontology, and director of the Jack and Pearl Resnick Gerontology Center.
SPECIALIZED AREAS OF RESEARCH AND NEW RECRUITMENT

In addition to the expansion and revitalization of the Jack and Pearl Resnick Campus, investments in critical areas of specialized research have enabled Einstein to focus on needs for the future and undergo substantial recruitment of top faculty to lead these institutes. Buoyed by the generous philanthropy of its most steadfast supporters, Einstein established new institutes and centers and several new areas of research, including a department of systems and computational biology and the Marilyn and Stanley M. Katz Comprehensive Cancer Prevention and Control Program. The investments in these critical research opportunities will allow Einstein to advance knowledge of key components of disease prevention and treatment.

A significant investment by the chair of Einstein’s Board of Overseers, Ruth L. Gottesman, Ed.D., facilitated the growth of several key areas of research for Einstein, including the creation of the Gottesman Institute for Stem Cell and Regenerative Medicine Research. Led by Paul Frenette, M.D., this Institute provides a cohesive and supportive environment to nearly two dozen stem cell investigators focusing on a diverse range of applications of stem cell biology to human diseases such as cancer, liver failure, heart disease, and neurodegenerative disorders.

In 2009, Einstein Board member Zygmunt “Zygi” Wilf and his family made a generous gift to support the creation of the Wilf Family Cardiovascular Research Institute. The Institute’s mission is to better understand cardiovascular disease—the world’s number-one killer—so that Einstein can translate this knowledge into novel treatments to relieve suffering and improve health. With this Institute, Einstein now has recruitment resources to focus on the prevention and treatment of heart attack, stroke, congenital heart disease, and many other critical conditions. Under the direction of Richard N. Kitsis, M.D., the Wilf Institute involves basic, clinical, and epidemiological researchers from a variety of disciplines who exemplify the collaborative spirit of Einstein while working towards innovative treatments for this long-standing human affliction of cardiovascular disease.

The partnership of the Harold and Muriel Block Institute for Clinical and Translational Research (ICTR) at Einstein and Montefiore gives Einstein researchers access to clinically important patient populations and provides expanded opportunities for Montefiore-based clinicians to initiate and participate in clinical research projects. This Institute is designed to break down barriers and encourage the translation of basic discoveries into clinical applications. These resources enable researchers to more easily and efficiently perform clinical and translational research without the need to “reinvent the wheel” for every study. In addition to enhancing collaboration, the ICTR oversees clinical training and career development programs, such as mentored career development for clinical scientists in a multidisciplinary environment. This vital component of the Institute helps secure a pipeline of young physician-scientists engaged in clinical and translational research, which is critical to the discovery of new treatments.

“It takes a dedicated team to make important medical discoveries. The Wilf family’s relationship to Einstein is more than a partnership—we’re playing on the same team. Together, we’re going to achieve great things.”

— Zygmunt “Zygi” Wilf
To lead and support these specialized facilities and institutes, more than 140 faculty members have been attracted to Einstein from some of the most prestigious medical institutions across the country. As part of Einstein's transformation and growth, these scientists have come to Einstein to lend their invaluable expertise in areas such as stem cell research, genetics, and neuroscience. During this period, Einstein filled seven chair vacancies, instilling even stronger leadership in its team of talented investigators.
ENHANCED EDUCATION
Einstein is also transforming the educational piece of its mission. As a fundamental component of Dean Spiegel’s strategic initiatives, education enhancement has played a key role in the revitalization of Einstein over the last seven years.

To better support the student learning experience amidst an age of changing technology and collaborative research, Einstein underwent several enhancements to its curriculum and infrastructure. Having moved to a paperless curriculum, Einstein education involves a team-based learning approach for graduate students as well as integration of other disciplines in what were formerly standard academic courses. The newly launched SOAR (Student Opportunities for Academic Research) program allows first-year students to pursue independent scholarship in focused areas such as bioethics, public health, urban healthcare, care for the elderly, global health, and clinical and translational research, culminating with a final “capstone” project. Coursework is no longer limited to standard note-taking and tests; students learn applicable skills as soon as they enter Einstein, so that they are fully prepared for their careers in medicine.

The opening of the Ruth L. Gottesman Clinical Skills Center in 2009 was another major enhancement to education at Einstein. This facility provides medical students with rigorous training in patient relationship and communication skills, further expanding the ethical and moral dimension of Einstein’s curriculum. As a much-needed resource to prepare students for their careers, the Clinical Skills Center is Einstein’s first campus facility devoted to teaching students the skills involved in examining and interacting with patients. Courses such as Patients, Doctors and Communities (PDC) integrate behavioral and social sciences while emphasizing communication, professionalism, ethics and current policy. The Clinical Skills Center, and the range of educational enhancements made to Einstein’s curriculum as part of the institution’s transformation, will better prepare the next generation of physicians and scientists to enter the world of medicine with a rigorously honed set of skills.

“We’re creating a new set of educational competencies here at Einstein to specifically address what we think the physician of the future needs to know.”
—Martha S. Grayson, M.D. ’79 Senior Associate Dean for Medical Education
MOVING EINSTEIN FORWARD

By strategically expanding the research faculty and ensuring access to state-of-the-art technologies, Einstein has strengthened its research base, enhanced its leadership position in the research community, and continued a long tradition of translating fundamental scientific discoveries into meaningful clinical breakthroughs that improve the human condition. The significant growth of the last seven years has positioned Einstein to more effectively investigate health-related focus areas of high national priority. Building on this growth, Einstein is now poised to leap forward to complete its transformation and create new specialized areas of focus that will elevate biomedical research and education in the face of a changing industry.
More than ever, Einstein’s commitment to improving human health guides the institution’s priorities. Over the last few years, the U.S. Food and Drug Administration (FDA) has seen a decline in the number of new drug applications as pharmaceutical companies downgraded their investments in research and development. Out of every 5,000 compounds screened for their potential to become drugs, only 250 progress from laboratory to animal testing, and just one wins FDA approval. Additionally, on average, it takes 13 years and $1 billion for a pharmaceutical company to bring a drug to market, and it is becoming increasingly rare for these companies to invest in potential drugs without proof of concept.

This laborious process is insufficient for patients awaiting new medications. Better therapies are urgently needed to improve human health worldwide. Therefore, as part of its next phase of transformation, Einstein has launched a new center committed to pursuing discoveries that will push potential drugs further along the development pipeline and into the market.

This new Center for Experimental Therapeutics will proactively advance the most promising projects and ensure the continuation of biomedical research for potential new drugs that are sorely needed. Einstein investigators already possess the talent and a track record of identifying novel therapeutic targets, the key starting point for new medical

“Pharmaceutical companies traditionally focus on drugs that can earn billions of dollars a year. The problems they target are often not the most important in terms of human health and welfare. We at Einstein have more altruistic goals.”

—Vern Schramm, Ph.D. Professor and Ruth Merns Chair in Biochemistry
treatments. To provide proof of concept for drug development, these targets must be tested not just with animals, but in clinical trials.

Einstein already runs more than 500 active clinical trials that investigate the merits of critical potential breakthroughs, such as a novel drug for the treatment of autism or a drug combination to prevent breast cancer.

While these trials provide a solid foundation, we must increase our clinical trial capacity to sufficiently test the vast number of discoveries uncovered by our researchers every day. As a result of its cutting-edge research, Einstein already possesses a robust patent portfolio that could potentially lead to therapeutics altering the course of treatment for major diseases such as cancer and heart disease, helping millions of people worldwide.

Additional funding could enable Einstein to advance promising therapeutic compounds along the drug development process and make them more attractive for licensing to industry for commercialization. Without appropriate funding for clinical trials, these compounds are never tested on patients—a critical step in the development of new treatments. With its new Center for Experimental Therapeutics, Einstein will have the resources to advance the drug development process, accelerating treatment for patients in need.

As of January 1, 2013, Einstein had more than 60 issued, unlicensed patents and more than 100 patent applications. This patent portfolio, if tested further, could lead to disease therapeutics for major diseases that debilitate millions of people worldwide. Without funding, these patents sit idle as they await the opportunity to move forward in the drug development process.
As part of Einstein’s commitment to improving health, genome sequencing and analysis will be a priority, given the importance of its role in the future of medicine. A technological revolution is occurring, enabling scientists to sequence the human genome’s three billion letters more quickly, accurately, and cheaply than ever. As genome sequencing becomes more affordable and routine, applications to personalized medicine in highly targeted cancer treatment, pharmacogenomics (prescribing the right drug in the right dose based on genetic differences in patient ability to respond to and metabolize drugs), and other areas will flourish. During the next phase of Einstein’s transformation, we will mount a major initiative in clinical genomics. Einstein investigators will be able to leverage the resources of the newly established New York Genome Center to answer previously unanswerable questions about the causes of a wide range of human diseases. This knowledge will lead to improved diagnosis and treatment, truly ushering in a new era of personalized medicine.
INSTITUTE FOR BRAIN RESEARCH

To further explore and understand the relationship between basic brain functionality and diseases such as autism and Alzheimer’s, Einstein will invest in an Institute for Brain Research that will pioneer new research critical for discoveries.

Einstein’s Dominick P. Purpura Department of Neuroscience is one of the oldest and most prestigious neuroscience departments in the country, and will further enhance its research of the brain with a dedicated investment in this new Institute. Founded in 1974, the department has long maintained a multidisciplinary approach to studies of nervous system structure and function and is now home to 25 full-time tenured and tenure-track faculty members.

As an interdisciplinary, multidepartmental entity, the new Institute for Brain Research will marry neuroscience, psychiatry, and a multitude of other areas to create a collaborative and interconnected targeted study to enhance understanding of the brain in relation to disease. With nearly 15,000 square feet of new research space, new recruits, and an endowment to support research, the Institute will provide the resources needed to effectively investigate mysteries of the brain and begin to unlock answers regarding many developmental diseases.

Einstein has launched a national search for an outstanding investigator who will lead the Institute for Brain Research and chair our neuroscience department, bringing the talent and leadership necessary for this critical initiative.
CAMPUS REVITALIZATION AND RECRUITMENT

To foster growth in specialized areas of high priority, Einstein must continue to invest aggressively in the team of talent that drives innovative thinking on campus. Einstein’s highly targeted strategic recruitment of top investigators from across the country will continue to bring new ideas and strong leadership in key departments. The recent joint recruitment with Montefiore of Judy Aschner, M.D., one of the leading pediatricians and neonatologists in the country, as the chair of the pediatrics department is a prime example. This recruitment will bolster several important programs, including the Children’s Evaluation and Rehabilitation Center (CERC), a clinical program that recruited its first research director in 2009.

Researchers need lab space, so the continued revitalization of physical space in the coming years will be aligned with the opening of more labs, including significant space for new leaders who will work in Einstein’s Cancer Center. The continued repurposing of campus facilities will create new dry and wet labs for recruits, maximize the use of buildings, and create much-needed new common spaces to encourage collaboration among faculty, students, and the entire Einstein community.
A NEW EDUCATION CENTER
To further support and enhance the innovations made to the education curriculum in the first phase of transformation, Einstein has announced the creation of a new Education Center based on the increasingly collaborative nature of research and learning. The Center will encourage interactive, small group learning, complete with state-of-the-art technology, more dedicated study space, and a new simulation center to hone the development of anatomical skills.
Einstein’s transformation over the last seven years has been remarkable—an era of growth, innovation, and exciting developments in research and education. From the physical expansion of our campus to the strategic investments made in specialized facilities, faculty recruitment, and educational enhancements, Einstein is on a journey that will change the very nature of this institution.

The tremendous momentum Einstein is experiencing has been made possible through the support and generosity of its most dedicated stakeholders, especially members of the Board of Overseers, Benefactors, alumni, and special friends of the institution. Their unprecedented outpouring of support for Dean Spiegel’s vision of transformative research to improve human health has provided the foundation for the groundbreaking initiatives described in this document.

As we move forward, we remain true to our values and commitment to improving human health worldwide. To fulfill this mission, we must meet the unique challenges and changes in biomedical research by investing in strong research talent, enhancing our infrastructure and educational programming, and creating specialized centers that will support innovative discoveries to advance medical treatments.

While millions of patients await new treatments for diseases such as cancer, cardiovascular disease, diabetes, and Alzheimer’s, Einstein researchers are diligently focused on advancing discoveries that will help these patients in need. The evolution of Einstein in the last seven years has created a platform that better supports our research capabilities, and we stand ready to drive innovation as we expand deeper into new technologies and opportunities.

The next phase of Einstein’s transformation will require bold investments to accelerate discovery. Given the variability of NIH funding, it is crucial that we secure visionary philanthropic support that will allow Einstein to continue to expand the scope of research and discovery.

With your help, we can support our talented community of faculty and future physicians and scientists whose creative and collaborative research will alter the possibilities in medicine.

We invite you to join us in this exciting chapter of Einstein’s history and help us pioneer progress in medicine.
To support the infrastructure and programs that enable Einstein to create an environment of discovery, the organization relies on several sources of revenue. This pie chart shows funding projections for a sample fiscal year as a percent of the total annual budget (approximately $450 million).

NIH grants are a core funding source for biomedical research institutions, but by design, these grants do not cover the full cost of the work being done. So as Einstein has successfully increased its NIH support over the last decade, the need for corresponding philanthropy has also increased—and federal budget cutbacks have only exacerbated this situation.

Medical school tuition is $42,833 per year (exclusive of fees), but this represents one of the smaller portions of Einstein’s budget, and every attempt is made to keep tuition increases to a minimum so that our students do not graduate with an inordinate amount of loan indebtedness. Likewise, revenue from other sources such as clinical programs and nonfederal research grants and contracts is helpful but still leaves a significant funding gap.

A combination of current use funds from supporters, as well as increased investment income thanks to gifts that help to grow Einstein’s endowment, is needed to make the difference.

In the end, it is philanthropy that will continue to drive Einstein forward to new heights.
Science at the heart of medicine

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