



**Board of Trustees Meeting
Approved October 11, 2013
Aiming Higher: The University of Rochester
Strategic Plan (2013-2018)
Joel Seligman and Peter Lennie**

I. INTRODUCTION

We believe in the Rochester ideal – that great research is inextricably linked to great teaching and community service.

The University of Rochester consistently is among this nation’s leading research universities in terms of the path-breaking ideas of our faculty, the achievements of our graduates, the quality of our patient care, the creativity of our artists, and the magnitude of our federal sponsored research awards.

Our culture is one of transformative ideas. School of Medicine and Dentistry Dean George Hoyt Whipple performed research on the cure for pernicious anemia for which he was awarded the Nobel Prize in Physiology in 1934; breakthrough research led to the first vaccine against any form of cancer; progesterone was discovered here; morphine was first synthesized; the vaccine that virtually eradicated childhood meningitis was developed in our Medical Center. The University has helped transform business and related fields with its role in developing agency theory and positive accounting theory; political science, with scholarship and teaching of rational choice theory; nursing, with its unification model linking nursing education, research, and practice; and medicine, with the biopsychosocial model, which simultaneously takes into account the patient, the social context in which he or she lives, the physician’s role, and the health care system.

We are educational innovators. We have developed programs that are best in class or among the best in class, including political science, economics, evolutionary biology, brain and cognitive science, optics, orthopedics, finance, accounting, neuroscience, musculoskeletal, vaccine development, and RNA biology.

We are one University. We have built on the proximity of our River and Medical Center campuses and the nimbleness of our faculty to collaborate in ways that transcend department or school lines. The Eastman School of Music was the first to link the study of music to the University; we created the first Institute of Optics that integrates quantum optics and engineering; developed the Laboratory for Laser Energetics, which has achieved national leadership in inertial confinement fusion; and our biomedical engineering programs that link the School of Medicine and Arts, Sciences and Engineering.

We are confident about our future. The University of Rochester has evolved from a regional leader into a leading national research university with growing opportunities to contribute to local, national, and global progress. This transformation is gathering momentum as we have strengthened our faculty, programs, and staff, translated innovation from our campus to a broader community, while increasing our geographic and cultural diversity.

II. OUR VISION IN 2018

By 2018, we envision that the University of Rochester will fortify its position as one of this nation's leading research universities consistent with our core values of academic excellence, academic freedom, diversity, and community. Fundamental to our progress will be continued strengthening of our faculty, students, and staff. Five years from now we intend to be a university ever better in the quality of our teaching, research, clinical care, and creative arts.

During the next five years we will make major commitments to data science; health care; faculty growth in the College of Arts, Sciences and Engineering; new or expanded programs to support learning and research; improved infrastructure; and classroom and library renovation.

We will successfully complete our first comprehensive capital campaign since 1924.

Our campus in 2018 will include College Town, an expanded Brooks Landing, the Golisano Children's Hospital, a new Imaging Sciences/Pediatric Ambulatory Building, a new University Data Science facility, and a Science and Engineering Quadrangle including the new University Data Science building and Goergen, Wilmot, Gavett, Hutchison, and Hopeman halls, the Computer Science building, and Carlson Library.

The University, the Medical Center, and each School will have a sustainable financial model.

Within our community we will build on our role as the region's largest employer and engine of economic development to help catalyze the revitalization of Rochester.

III. OUR VISION IN OUR 2008 STRATEGIC PLAN

In 2008, the University Board of Trustees adopted our last University Strategic Plan. By the conclusion of the Comprehensive Capital Campaign in 2016, we envisioned:

- A University whose quality placed it among the leading 20 research universities in the United States consistent with our core values of academic excellence, academic freedom, diversity, and community.
- A student body that would grow from approximately 8,300 students in Fall 2004 to approximately 10,000 in 2015.

- A concomitant growth in our tenured and tenure track faculty, made possible by a substantial increase in endowed professorships.
- Dramatic improvements in student residential life, expanded athletic facilities, and a substantial start on expanded College performing arts programs and facilities.
- Breakthrough programs such as Technical Entrepreneurship and Management that linked the College and Simon.
- Expanded facilities and a fully integrated Electronic Medical Records system providing higher quality patient care.
- Approximately \$1 billion or more of new facilities between July 2005 and June 2016.
- A significantly higher and sustainable level of annual giving to provide unrestricted support for University programs.
- A University-wide endowment draw of no more than 6.1 percent by FY 2017, with the University would continuing to maintain its target 5.5 percent annual endowment draw rate.

We have substantially achieved our 2008 goals:

- When normalized for faculty size in 2011, the most recent year for which we have data, we rank 15th in federal research funding among the 176 top funded research universities, with more than \$400 million in total sponsored research during each of the prior two years and \$348 million in 2012.
- Our student body has grown from 8,300 total students in 2004 to 10,510 this past year, effectively achieving the goal of our 2008 strategic plan. Since 2005, we have received \$160.3 million in commitments for scholarships, fellowships, and other support for students.
- Undergraduate student quality and diversity have been strengthened. At the College we have seen increases of high school GPAs from 3.56 to 3.81 and the two-score equivalent SAT from 1304 to an anticipated 1368 in the 2013-2014 academic year. Simultaneously the percentage of our underrepresented minority and international students has increased.
- Tenured, tenure track, clinical, and other instructional staff have grown from 2,009 in 2004 to 2,499 in 2012. Since 2005 we have created or received commitments to create 66 new endowed professorships and deanships.
- New programs have been developed throughout the University, including the Health Sciences Center for Computational Innovation; the Center for Integrated Research Computing; 14 new majors in the College of Arts, Sciences and Engineering, including those in international relations, public health, digital media studies, and the Barry Florescue Undergraduate Business Program; and the Center for Medical Technology Innovation jointly developed by the School of Medicine and Dentistry and the Hajim School of Engineering and Applied Sciences.
- Twenty-four new major facilities projects have been completed or initiated since 2005 with an aggregate budget of \$723 million, including Goergen Hall,

Eastman Theatre Renovation and Expansion, LeChase Hall, Rettner Hall, and O'Brien Hall.

- The Medical Center has been particularly active with new facilities projects, including the James P. Wilmot Cancer Center, the Saunders Research Building, and the Golisano Children's Hospital, implementation of an Electronic Medical Records system, and new regional hospital affiliations, most notably with F.F. Thompson.
- The University facilitated the separately financed development of Brooks Landing and College Town and worked with local, state, and federal governments to secure funding for the new Interstate 390 road network, which will provide the basis for future growth at the University.
- We have grown to be the greater Rochester region's largest employer with 22,019 full-time equivalent jobs, making the University the seventh largest private employer in New York State, with an increasing role in the community as the provider of 47,000 direct and indirect jobs, \$2.4 billion in direct and indirect wages, \$66.9 million in uncompensated health care in 2012, and, since 1996, 55 startup companies using University-licensed technology.
- We have reduced our endowment payout rate from 6.9 percent in 2000 to 5.9 percent in this year's budget.
- This decrease has been achieved by a notable reduction in endowment payout in 2009-2010 at the College of Arts, Sciences and Engineering from \$32 to \$22 million that has been maintained with annual adjustments since then; relatively low administrative costs for our research programs; and cost efficiencies in University hospitals that have reduced their budgets or enhanced revenue by a total of \$99.7 million between 2009 and 2012.
- We publicly launched the *Meliora Challenge* in October 2011, our first comprehensive capital campaign since 1924. Through June 30, 2013, we have raised in cash and commitments \$945 million or 79 percent of the June 30, 2016 goal of \$1.2 billion.

IV. THE NEXT FIVE YEARS

A. THE RESEARCH UNIVERSITY IN THE 21ST CENTURY

United States research universities today are among this nation's greatest comparative advantages – centers of innovation, creativity, and training of new generations of leaders, professionals, artists, and scholars. As former Columbia University Provost Jonathan Cole memorably wrote in *The Great American University*:

[I]t is the thousands of scientists, scholars, and administrators who have been dedicated to their work on a daily basis that have truly put our universities at the top. Their ambition to excel and their fierce competitiveness to be “the best” have led American research universities to become the engine of our prosperity. The laser, magnetic resonance imaging, FM radio, the algorithm for Google searches, Global Positioning Systems, DNA fingerprinting, fetal monitoring, scientific cattle breeding,

advanced methods of surveying public opinion ... all had their origins in America's research universities, as did tens of thousands of other inventions, devices, medical miracles, and ideas that have transformed the world. In the future, virtually every new industry will depend on research conducted at America's universities.... The universities have evolved into creative machines unlike any other that we have known in our history – cranking out discoveries in a society increasingly dependent on knowledge as its source for its growth.

That research enterprise, placed firmly in a residential educational setting, also contributes immeasurably to the strengths and distinctiveness of undergraduate education.

Other nations throughout the world increasingly are competing with the United States research university model. Several nations, including China, India, Brazil and Singapore, are making enormous investments in research universities which are transforming global higher education in ways that both provide challenges and opportunities. International universities compete for outstanding faculty, but they also partner with research universities in the United States to provide increased support for global collaborative research.

We begin this period with a comparative advantage in undergraduate and graduate education. For the foreseeable future, we anticipate an acceleration of outstanding domestic and international students seeking admission to the most academically successful United States universities and colleges.

At the University of Rochester, our largest undergraduate program in Arts, Sciences and Engineering in recent years has seen validation of our approach in the systematic growth of its applications, quality measures, and diversity. We believe that the ever higher level of outstanding applicants is consistent with a widespread belief that higher education is a fundamentally important investment in students' futures and that education at a leading research university or college is the best type of educational investment.

Our opportunity in the 21st century is to accelerate our progress by building on our greatest strengths – our faculty, our outstanding academic departments and schools, and our multidisciplinary programs.

Our challenge is to harmonize these strengths with our resources. The University of Rochester today has approximately 2,500 faculty and more than 10,000 students in seven schools, with a total annual budget of approximately \$3.0 billion and net assets also of approximately \$3.0 billion. Compared to our key peer group of private universities with medical centers who are members of the Association of American Universities (AAU), we are smaller in terms of total students, tenured and tenure track faculty, and aggregate endowment.

We intend throughout the next five years to focus on enhanced support for our faculty and students and to develop additional support for existing and future programs where we

particularly can make a difference in the quality of our research, scholarship, learning, clinical care, and the creative arts consistent with our resources.

B. THE DIGITAL REVOLUTION

Advances in information technology are having an immense impact on all aspects of university life. Throughout the University, the transition to a digital future is well advanced. Faculty, students, and information services have been particularly affected by the digital revolution. Increasingly, faculty and students rely on digital rather than hard copy resources. New data management systems already have transformed our ability to reach out to our alumni and in the future will give us critical management tools to better employ financial reporting and student information systems.

Profound changes are also being driven by the explosion in the availability of data and the tools to deal with them. In 2013, *Science Daily* estimated that approximately 90 percent of the world's data has been generated in the past two years. The University is responding to this challenge by investing in the emergent discipline of data science and the high-performance computing resources it requires.

In 2008 we created the Center for Integrated Research Computing through a collaboration between the River Campus and Medical Center faculties and administrators. Today the Center includes 650 faculty, students, and research staff from more than 40 departments supporting computational and data-intensive research activities.

For the University as a whole, the creation of an internationally distinguished campus-wide Institute for Data Science is a top priority. Initially the Institute for Data Science will focus on three domains for research: Predictive Health Analytics, Cognitive Systems, and Analytics on Demand. In Data Science, we build on enormous strengths, including the Health Sciences Center for Computational Innovation, the Department of Computer Science in Arts, Sciences and Engineering, Biostatistics in the School of Medicine and Dentistry, historic achievements in machine learning and artificial intelligence, and more than 100 principal investigators having been awarded \$307 million in research relying in part upon high performance computation during the past three years. Between 2013 and 2018, the further development of a University-wide Data Science program will include expanding faculty across several schools by 20 tenured and tenure track professors and constructing a new facility to bridge data science across critical disciplines.

Rapid changes in technology are driving changes in the new curriculum. The College of Arts, Sciences and Engineering has introduced new programs in Digital Media Studies, Computer Science, and a Biomedical Engineering master's degree with a concentration in Medical Technology Innovation; developed humanities laboratories to introduce students to the use of technology in the service of humanities scholarship; and currently is developing an increasing number of experiential learning components in traditional courses, including more active use of online resources to assist students in entry-level courses. The School of

Medicine and Dentistry has begun a transition to an online/iPad based curriculum. The Simon School is developing programs in Data Analytics.

Equally important changes are taking place in the way we deliver education. At the University of Rochester, we envision major opportunities for master's and certificate programs that employ online formats. This has already begun. For example, our School of Nursing has had success offering hybrid courses combining online and in-class teaching. For the 2012 academic year, 32 percent of all courses at the School of Nursing and 28 percent of its tuition revenue came from online courses. In the new generation of strategic plans, the School of Nursing intends to amplify its online efforts. Other schools, including Arts, Sciences and Engineering, the Warner School of Education, the Eastman School of Music, and the Simon School of Business, will increase or begin online programs.

For undergraduate programs we believe that the current residential teaching model will remain dominant for the foreseeable future, and that ensuring its continued high quality is a key to our future success. But we anticipate that the residential undergraduate teaching model will evolve during the next five years at research universities such as the University of Rochester with increased complementary use of new technology in undergraduate teaching and ancillary programs, allowing faculty to devote more time to working with students in laboratories, workshops, and discussion sessions rather than lecture formats.

C. INTERNATIONAL ENGAGEMENT

Major universities are increasingly global institutions, drawing students from all over the world, competing internationally for the most talented faculty, and establishing international partnerships that extend their potency in research.

Substantial international engagement is an indispensable part of a first-rate undergraduate and graduate education, providing diversity for our students that will mirror future employment and life experiences, and strengthening our financial base. Knowledge knows no boundaries. In the 21st century the most successful higher education programs will be those that have a global reach.

We are already a university characterized by a global student body and faculty and a growing number of international programs.

Our enrollment of international graduates and undergraduates has grown from 1,050 students in fall 2000 (13 percent) to 2,080 students in fall 2012 (20 percent). International undergraduate enrollment in Arts, Sciences and Engineering notably has increased, from 2.8 percent of the entering class in fall 2004 to an expected 19 percent this fall.

The percentage of our tenure track faculty that is foreign born similarly has grown from 8 percent in 2008 to 11 percent in 2012.

We anticipate that the next five years will be a period of increasing international engagement for the University of Rochester, principally in the expansion of international partnerships in research and in the expansion of opportunities for our students to study and work abroad. We have already taken steps to establish strong research linkages with emerging major universities in China, Hong Kong, and Singapore, and the Medical Center has completed a memorandum of understanding for educational programs with the Apollo Hospital Group, one of the largest health care systems in India. We are undertaking a major expansion of study abroad opportunities in Asia, Africa, and the South Pacific, mainly through exchange programs.

D. FUNDAMENTAL CHALLENGES

During the next five years, three fundamental challenges will dwarf all others at the University: the transformation of health care, the decline of sponsored research, and the cost of higher education.

THE TRANSFORMATION OF HEALTH CARE

The American health care system faces mounting pressures for cost containment, quality improvement, and public accountability. The 2008-2009 recession and the subsequent enactment of the Affordable Care Act have initiated fundamental change in the health care system. This transformation includes consolidation of hospitals and the development of broad health care systems in which incentives are shifted from the current dominant fee-for-service model to bundled or population-based annual fee or “capitated” models that reward the combination of better service and lower cost rather than high procedure volume. It is reasonable to anticipate that there will be significant future reductions in third-party payor support for our hospitals and physicians as a result of implementation of lower cost insurance products through health care exchanges and a systematic effort to “bend the cost curve” in Medicare and Medicaid. As a result of these changes, the Medical Center faces substantial financial challenges to its clinical enterprise. Health care reform portends fundamental change in the way hospitals deliver care, the way clinicians are trained, scientists discover therapies and cures, and insurance companies and health care providers compete in offering health insurance.

The University of Rochester long has had a major role in health care through its hospitals, School of Medicine and Dentistry, School of Nursing, and health-care research programs. Approximately 83 percent of the consolidated University \$3.0 billion budget in 2013 originated in the Medical Center. Sixty-eight percent of the overall University budget involved patient care.

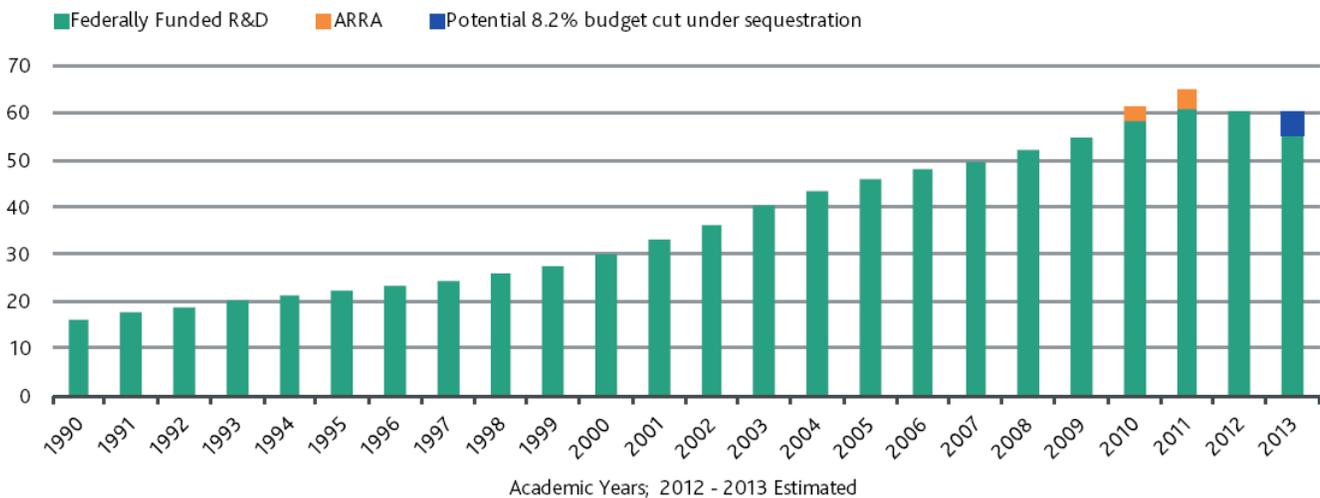
The University of Rochester Medical Center’s objective in the next five years is to change the way it cares for patients by developing an integrated system of robust services across the health-care continuum that delivers the highest quality care at the lowest cost. The Medical Center will continue evidence-based practices to provide the highest quality of care to its community; develop research programs of excellence to accelerate discovery;

adopt new skills and competencies for practitioners; and help evolve its educational system to meet the demands of a transformed health care landscape.

SPONSORED RESEARCH

In the 2011-2012 academic year, 14 percent of the University’s overall budget or \$348 million originated in federal, state, and corporate and foundation sponsored research. The majority of this total came from federal sponsored research programs, most significantly the National Institutes of Health, National Science Foundation, and Department of Energy.

National Federal Research Funding (\$ in Billions)



The decline in support for sponsored research has affected all aspects of research throughout the University. In the School of Medicine and Dentistry, which in 2013 was awarded \$132 million from NIH, reliance on institutional support for sponsored research recently has ranged between 40 and 45 percent of the School of Medicine and Dentistry’s budget. As real dollar support for sponsored research has declined, the School of Medicine and Dentistry increasingly must rely on its endowment (which is smaller than many of our AAU peers with medical centers) and margin transfers from Strong Memorial Hospital.

The School of Medicine and Dentistry today is developing a comprehensive plan to address how best to diversify its funding sources and otherwise respond to a probable period of stagnant federal sponsored research support.

Other parts of the University reliant on sponsored research such as the Laboratory for Laser Energetics have developed similar contingency plans.

THE COST OF HIGHER EDUCATION

We cannot be complacent about the high cost of education at our University, particularly for undergraduates. In recent years, the rising cost of higher education has been

a focus of intense public discourse. In the 2012 national elections, for example, both leading political parties emphasized reducing the rate of increase or absolute cost of higher education. In August 2013, the President proposed linking federal financial aid to students to college and higher education quality metrics.

These types of initiatives have prompted research universities to engage in systematic efforts to achieve greater cost efficiency and reduction in the rate of increase of undergraduate tuition. The University of Rochester has been unrelenting in its efforts to be cost efficient and to moderate the rate of tuition increases. Between 2004 and 2008, for example, the rate of tuition increases at our schools, when adjusted for inflation, averaged 4.2 percent; during the last five years, inflation-adjusted tuition increases have averaged 2.1 percent at the University of Rochester. During the period of our next generation of strategic plans, the University's commitment to cost efficiency will continue to be unswerving.

We, however, do not believe that online or for-profit education will be an effective substitute for the residential model used in our undergraduate programs even if some believe that there are potential cost savings because of the fundamental differences in the quality of these programs and the lesser success in online and for-profit in graduation and job placement. We believe that the recent growth in for-profit educational institutions and generally increased use of online teaching including MOOCs (Massive Open Online Courses), along with declining state support for public universities, will continue to widen the gap between the most outstanding research universities and liberal arts colleges and other post-secondary institutions.

V. UNIVERSITY OBJECTIVES AND GOALS FOR 2018

We unequivocally are committed to being an institution that emphasizes the greatest possible quality in our academic, clinical, professional, and creative arts programs consistent with cost efficiency. We seek to be:

- ***ONE OF THIS NATION'S LEADING RESEARCH UNIVERSITIES:*** Our fundamental objective is to strengthen our position as one of this nation's leading research universities. At the University of Rochester this means strength not only in research, but also as a university that is strong in liberal arts undergraduate education, professional training in the schools of business, education, medicine and nursing, outstanding clinical care throughout our health system, and commitment to the creative arts exemplified by the Eastman School of Music.
 - For the entire University, the recruitment, support, and retention of the most accomplished and diverse administrative leadership, faculty, students and staff is a top priority.
 - A top University priority will be the creation of the Institute for Data Science, the expansion of Data Science faculty and programs across the University, and the construction of a new Data Science facility.

- We will implement a University Research Strategic Plan to strengthen the vitality of the research mission at the University of Rochester. Among other topics that will be addressed by the Plan will be Research Foundations for a Healthier Society; Light and Sound; and Energy and the Environment.
- We will emphasize improving infrastructure and renovating classrooms, laboratories, and library space to provide our faculty, students, and staff with state-of-the-art facilities.
- ***A UNIVERSITY THAT EMPHASIZES QUALITY EDUCATION:*** We will continue to strengthen undergraduate, graduate, and professional education:
 - The College of Arts, Sciences and Engineering will build on its momentum in residential education to enhance its curriculum by adding new majors, including, subject to faculty approval, a new undergraduate business degree developed with the Simon School of Business; teaching, learning, and research opportunities that employ digital technology; increasing student retention; opportunities for student research; and strengthening career preparation. By 2018, Arts, Sciences and Engineering will increase its faculty from approximately 350 to 380; increase its two-score equivalent SATs for entering students from 1368 to at least 1400; increase applications from approximately 16,000 to 20,000; and increase six-year student graduation rates from 85.6 percent to 88 percent.
 - The School of Medicine and Dentistry will implement the Institute for Innovative Education (IIE) to provide education across the entire Medical Center and better employ information technology in medical education. The IIE will oversee state-of-the-art education programs and the development of the new Simulation Center.
 - The Simon School will develop major new programs in Data Analytics and Pricing; lead efforts to develop a new branch campus in New York City initially in conjunction with the School of Nursing and the Warner School; and partner with the College of Arts, Sciences and Engineering on an enhanced undergraduate business degree program.
 - The Eastman School of Music will develop, subject to faculty approval, a new undergraduate program in convergent media, a new master of arts program in music leadership, and programs in online education.
 - Our schools generally, led by the School of Nursing and the Warner School of Education, will expand or implement hybrid or other online education, especially in master's programs.

- ***A UNIVERSITY KNOWN FOR IMPROVED HEALTH CARE:*** We will improve health care for our community through transformative approaches to clinical care that are nationally recognized:
 - The new Accountable Health Partners will become the region’s leading accountable care network recruiting a substantial additional number of primary care and specialist physicians into its network by 2018.
 - The University of Rochester Medical Faculty Group (URMFG) will become a model of an integrated University-based practice that includes centralized administration and a compensation plan based on performance, service, and quality.
 - The Medical Center will further its current recognition of specialty areas in the top 50 in the *U.S. News Best Hospitals* rankings, especially within its Centers of Excellence, including the Wilmot Cancer Center and the Golisano Children’s Hospital.
 - We will complete the initial phase of construction of the new Golisano Children’s Hospital by 2015 and achieve greater recognition of our Pediatric Programs of Excellence.

- ***A UNIVERSITY KNOWN FOR SERVICE TO THE COMMUNITY:*** We will strengthen our service to our community and society by:
 - Enhancing programs to support Rochester K-12 education, health care, and community programs.
 - Enhancing our position as the regional and national leader in economic development and technology transfer.
 - Strengthening technology transfer and startups consistent with our academic mission through active engagement of the business community, including our innovation advisory network, composed of our alumni; increased ties with our career center; and expansion of the technology development fund.
 - Maintaining or increasing our licensing revenue.
 - Completing major projects, including the expansion of Brooks Landing and College Town.

- ***WE WILL SUCCESSFULLY COMPLETE OUR CAPITAL CAMPAIGN:*** We will successfully complete our capital campaign by June 30, 2016, raising a minimum of \$1.2 billion, achieving each of our specific Campaign goals, including support for students and faculty, while increasing the membership of the George Eastman Circle to 3,300, and achieving a higher sustainable level of annual giving that continues after the campaign.

- ***WE WILL DEVELOP FULLY SUSTAINABLE FINANCIAL MODELS:*** We will more fully implement sustainable financial models for our University, the Medical Center, and each School.
 - We will limit, except in extraordinary circumstances, the aggregate University of Rochester endowment draw to no more than 5.9 percent, while maintaining the target of 5.5 percent.
 - We will maintain competitive compensation programs for our faculty and staff and complete significant infrastructure and deferred maintenance projects.
 - We will develop new programs for revenue enhancement and cost efficiencies through shared services and new technologies to support University objectives.
 - We will review use of our facilities in the College of Arts, Sciences and Engineering, the River Campus Libraries, and the Medical Center to determine if we can more efficiently use existing space.

VI. CONCLUSION

Our emphasis in the next five years will be on systematic improvements in quality balanced by a determination to create sustainable financial models for our University and each School and the Medical Center.

We build on tremendous momentum and with the knowledge that we have successfully implemented many of the goals of our 2008 strategic plans.

We will always remember that our most important resource is our people – our faculty, students, alumni and staff. All that we have achieved or aspire to achieve is based on a University community that is exceptionally collaborative, mutually supportive, and committed to the spirit of our University motto – *Meliora*, ever better.

We are one University. We are the Rochester family.