During the strategic planning process, six themes emerged.

1. Enhance Education value

We will continue our commitment to recruiting students from diverse backgrounds who exceed measured scholastic norms and who have demonstrated a commitment to serving others, and facilitating their mastery of the health sciences with the most effective didactics and pedagogy measured by national exam performance and resident director and post doc evaluations. Increase educational value includes not only scholarships and stipend support, but also improved educational effectiveness. We are committed to continuous quality improvement in our MD and health sciences curricula.

We must also increasingly address and measure educational value to reduce student costs (e.g. student residence, scholarships, and tracking outcomes of our educational programs). BUSM will provide faculty training and support educational and pedagogical research, critically evaluating the way we teach to create best practices (evidence based pedagogy). We will facilitate faculty educational research with biostatistics support and medical education research cores. Where appropriate and effective, we will expand the use of technology in teaching.

2. Invest in the Research Enterprise including Cores

BUSM will develop or recruit outstanding investigators and will support and strengthen our federally funded research enterprise.

We should especially:

- Capitalize on the unique collegial atmosphere at BU to promote research collaboration. We will maximize leverage of our research investments in program development, cores, interdisciplinary programs, NEIDL, CTSI, etc.
- Improve the culture of safety and compliance.
- Strengthen collaborations between BMC and BUSM and between BUMC and the Charles River Campus.
- Standardize research administration between BUMC & BMC to the extent possible
- Incorporate research opportunities based on our role in serving disadvantaged patient populations.

3. Organize Information Systems & Technology

Based on a recent Huron study of IT, the Medical Campus has a relatively small cohort of central IT personnel and the larger than usual number of IT personnel imbedded in departments and administrative units, generally justified by the lack of central services.

Huron estimates that BUMC is spending more for IT services than necessary and is receiving fewer services given the cost, because of the lack of economies of scale and particularly the lack of specialization provided.

Huron recommends that BUMC consolidate many IT services centrally, some with BU (e.g. outsourcing of servers), and recruit appropriate IT leadership and specialists to support its educational, administrative, and research computing missions. We have posted a position for a Director of BUMC IT.

4 Optimize Space Utilization

We will continue our three school Instructional Task force to plan optimal instructional space and appoint and charge a similar three school Research Space Committee to optimize use of research and core (e.g. animal labs) space, to anticipate short and long term growth potential.
We will improve facilities to enhance our academic community. Student, post doc and junior faculty housing would create a permanent revenue stream. Student housing, at or below market rate will improve education and community and decreasing student cost of living and debt. Building community space would promote interaction between students, faculty and staff of BUSM, SPH & SDM.

5. Enhance Diversity

In 2008, we chartered an ad hoc, medical campus committee to provide guidance in enhancing diversity on campus. BUMC has adopted the following initial goals recommended by the three school Committee on Diversity and Health Disparities.

BUMC will appoint three co-directors of Diversity and Multicultural Affairs, one from each school, to coordinate activities across the campus and integrate initiatives supporting diversity as part of the core missions. This office will establish and track metrics to determine if we are succeeding in our efforts at diversity. The three co-directors will be supported by a permanent committee on diversity chaired by one of the co-directors. BMC would also be welcome to participate.

All BUMC faculty searches will be conducted according to the search guidelines outlined in BU policy for maximizing the possibility of enhancing diversity in the faculty.

The co-directors and the committee should develop a website which links all diversity initiatives and research opportunities, faculty postings and training grants. This should be utilized as both an internal resource as well as an external source for potential applicants.

6. Enhance Development

BUSM’s largest sources of income are tuition and F&A, followed by clinical salaries and direct grant costs. Given that institutions invest ~10-20% of their research dollars over the income provided by F&A, and that we have made a commitment to controlling student tuition costs, investments for the programs above must come from expanded philanthropy.

We will expand the development office. Department and Center leadership needs to be involved with developing high quality program literature.
Mission (Voted by the faculty 9/10/09)

Boston University School of Medicine is dedicated to the educational, intellectual, professional, and personal development of a diverse group of exceptional students, trainees, and faculty who are deeply committed to the study and to the practice of medicine, to biomedical research, and to the health of the public. We, as a community, place great value on excellence, integrity, service, social justice, collegiality, equality of opportunity, and interdisciplinary collaboration.

Vision

BUSM will provide International leadership in medical education, research, and patient care.

Institutional Educational Goals

The BUSM MD Graduate Institutional Learning Objectives (ILOs) BU CARES (voted by the faculty 9/10/09) linked ACGME competencies in parenthesis:

B - Behaves in a caring, compassionate and sensitive manner toward patients and colleagues of all cultures and backgrounds, using effective interpersonal and communication skills (Interpersonal and Communication Skills; Professionalism)
U - Uses the science of normal and abnormal states of health to prevent disease, to recognize and diagnose illness and to provide an appropriate level of care (Medical Knowledge; Patient Care)
C - Communicates with colleagues and patients to ensure effective interdisciplinary medical care (Interpersonal and Communication Skills; Patient Care)
A - Acts in accordance with the highest ethical standards of medical practice (Professionalism)
R - Researches and critically appraises biomedical information and is able to contribute to the advancement of science and to the practice of medicine (Practice-based Learning and Improvement; Medical Knowledge)
E - Exhibits commitment and aptitude for life-long learning and continuing improvement as a physician (Practice-based Learning)
S - Supports optimal patient care through identifying and using resources of the health care system (Systems-based Practice; Patient Care)

The BUSM GMS Masters or Doctoral graduate Educational Goals: As a Division we will train professionals of the future that uphold the highest ethical standards, promote excellence and integrity in their respective specialties and advance the overall health of society. Our PhD students will become scientists who will work to utilize their knowledge to lead biomedical research and education. Our Masters students will receive the highest standards of training so that they may directly enter an array of biomedical, behavioral or other health-related career fields be prepared for further advanced training in the existent or arising fields of the 21st century.

Process

More than a decade ago, BUSM began a process of regular self-assessment that yielded our first strategic plan, BUSM 2000, which guided the schools investment in genetics and information technology, and merging of two basic science departments (Physiology & Biophysics).

In 2005, Boston University President Robert Brown initiated a collaborative, university-wide strategic planning process. The Boston University Trustees approved the resulting university-wide plan, Choosing to Be Great, in fall of 2007. The plan established clear university priorities, including an expanded emphasis on trans university interdisciplinary research. Significantly, the plan explicitly identified key professional schools (Medicine, Law, Management, and the College of Fine Arts) as critical to the overall excellence of Boston University, therefore meriting targeted investments to ensure their continued success and improvement.

The 2006 School of Medicine’s strategic plan, 2020 Vision was completed in collaboration with the all-university process. This plan guided curriculum reform and integration, lower than peer tuition increases, plans
for a student residence and classroom renovations, targeted junior faculty recruitments and development, and investments in research cores (including the animal facility).

Also in 2006, a **review of our basic science departments**, chaired by Dr. Phil Sharp, recommended a broader involvement with Biomedical Engineering and investment in genetics (leading to the transition of a dysfunctional Genetics Department to a campus wide center).

In 2007, the school underwent a major **review of its Division of Graduate Medical Sciences**, culminating in a report in January of 2008 that guided the national search for new leadership. Dr. Linda Hyman arrived on July 1, 2009.

In December of 2008, given the global economic crisis, the Executive Committee reexamined our **2020 Vision** given economic uncertainty. The group remained committed to the previously agreed upon goals, while recognizing that the speed of attaining them might be altered. The consensus of the review was, "let's not lose our momentum".

In March of 2009, the School of Medicine’s began a **new 18 month-long strategic reassessment**. Revised departmental, associate deans’ office, centers and administrative units draft plans, due July 1, 2009, were posted online. A Missions and Bylaws revisions ad hoc committee was appointed. The Executive Committee, comprised of associate deans, chairs, center directors and administrative leaders then began a series of half-day strategic planning retreats.

On July 29, 2009, at the first mini-retreat, Executive Committee Members discussed the prior University and School plan, and in a series of three focus groups in research, education and infrastructure, suggested modifications and determined current priorities. The results were compiled and distributed.

In August of 2009, Boston University President, Dr. Robert Brown, noting both the current economic uncertainty and the broad acceptance of the University’s strategic plan, asked deans to review and revise their strategic plans. University strategic planning thus began proceeding in parallel with a series of retreats for Deans of the 17 BU schools and University Leadership.

On September 9th, 2009, the Medical School Executive Committee met again for a half-day retreat to review the suggested modifications to the current strategic plan and the identified priorities and, again in focus groups, to pare down the number of priorities. The plan was then revised through discussion and review of the previous strategic plan based on regulatory changes, current and anticipated economic realities, scientific advances, and the School’s mission.

In November 2009, committees for the LCME self-study process were formed. More than 250 junior and senior faculty and staff participated, as well as more than 60 BUSM students. In addition, a number of focus groups met to begin to draft the required BU strategic planning reports and goals for BUSM based on the departmental and executive strategic planning meetings to date.

At the third mini-retreat on February 17, 2010, the Executive Committee discussed the draft of the strategic plan in plenary session and then broke into groups to determine further modifications. The modifications resulted in the 4/11/10 BUSM Strategic Plan, which was submitted to the University President as BUSM’s current strategic plan. The University requested no modifications.
2. Identification of Academic Peer Group

For our 2006 strategic plan, we chose the following urban, private, research schools of medicine, many with safety net affiliations, and included some additional local peers.

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<tr>
<th>2008 NIH Funding rank + affiliates</th>
<th>2009 USNWR rank</th>
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3. Faculty Quality

The Boston University School of Medicine (BUSM) Faculty are outstanding benchmarked against our peers based on the following evidence.

Scholarship: BUSM faculty members have an outstanding publication record. BUSM faculty have published in leading biomedical journals including the New England Journal of Medicine, Journal of the American Medical Association, Science, Nature Medicine, Nature Cell Biology, Nature Genetics, Proceedings of the National Academy of Sciences, and Journal of Clinical Investigation.

Research: As per the attached table (Appendix 1), BUSM faculty are ranked 47th in federal grant funding based only on BUMC grants are ranked 30th if affiliates (BMC, VA, RWMC, etc) are included. (Harvard rank changes from 26th to 1st with the inclusion of their affiliates.) Total grant funding correlates closely with faculty size. When calculated as federal grants per faculty member, BUSM is ranked 22nd in USN&WR.

The 2008 Nobel Prize in Chemistry was awarded to Osamu Shimomura, BUSM Professor Emeritus. In 2009, Michael Holick received the Linus Pauling Institute Prize for Health Research. Gordon Snider received a lifetime achievement award from the Alpha-1 Foundation. Jonathon Woodson won the 2009 AAMC Gold Foundation Humanism in Medicine Award. Many more faculty received such recognition by their peers.

We have top tier programs in repetitive sports head injuries, amyloidosis and in geriatrics. BUSM has been the academic home of the Framingham Heart Study for more than 40 years. The NEIDL other competitively federally funded Centers of Excellence also reflect significant recognition of the quality of BUSM research.

Many faculty serve on or chair NIH or Foundation study sections. BUSM faculty members regularly chair sections and deliver invited presentations at international meetings such as Gordon Conferences, Keystone Symposia, and professional society meetings, etc. We have few faculty members who are members of the Institute of Medicine and the American Association of Professors (AAP), which impedes our ability to induct others.

Professional Practice: BUSM faculty are ranked in the top 1-3 programs nationally in clinical care for Amyloidosis, an often-fatal malignancy. We are also ranked highly in USN&WR in geriatrics and pulmonary medicine. We have NIH many competitively funded centers (e.g. Addiction and Alzheimer’s disease).

Education Innovation: BUSM supports a cadre of professional medical educators who have been promoted on the basis of their national and international standing in medical education. These faculty have formal MD/MA in Education, or in Medical Education, or PhDs in evaluation. These faculty regularly contribute medical education articles to the Academic Medicine (AAMC) and speak at National and International Medical
Education symposia. At the last AAMC meeting in 2009, many faculty chaired or contributed to plenary sessions and symposia. BUSM faculty have been active in curricula development for cutting edge educational innovations such as virtual microscopy (Debora Vaughan), web based clinical modules and clinical simulation (John Wiecha), and in novel use of Blackboard 8.

10 year plan:

BUSM will recruit outstanding faculty, generally junior faculty, in targeted areas to enhance cross-disciplinary research in neuroscience, health disparities, cardiopulmonary disease and cancer.

We will further strengthen formal faculty development programs, support core facilities to improve faculty productivity and improve quality of academic life.

Although BUSM has been successful in recruitment of high quality individuals, competition to retain high quality faculty is continuous. Special attention needs to be paid to senior fellow to junior faculty retention. Outstanding individuals should be identified early in their fellowships. Philanthropy for start up packages and retention packages would enhance our competitive with other universities.

Metrics:

Research & Scholarship: publications in key journals, NIH grants, patents, H Index, faculty honors and prizes

Education: MDs: Residency placements, residency program directors satisfaction with graduates’ performance, USMLE scores. GMEs: positions after masters programs and Post Doc placements

Excellence in care: Rankings of programs, NIH Center grants.

4. Academic Programs

4a. Assessment of undergraduate education:

Three early assurance programs are collaborative efforts between the School of Medicine and our undergraduate colleges:

The Seven-Year Liberal Arts/Medical Education Program (SMeds) since 1961, is one of the oldest combined baccalaureate-MD programs in the United States. It attracts some of the nation’s top high school graduates to the College of Arts and Sciences and subsequently promotes these highly talented individuals to the School of Medicine. Students complete a major in Medical Science and a CAS-approved minor. On average over 10 years, 475 students have applied to the program and 22 have enrolled. The mean SAT composite score of the entering classes has been 1500 (2000-5) and 2248 (2006-9). Their mean GPA has been approximately 3.9. The recent composite SAT scores are 63 points higher than those for the program at Brown University and the Warren Alpert Medical School, and 54 points higher than the program at University of Southern California and Keck School of Medicine, our peer schools with combined baccalaureate-MD programs.

The Early Medical School Selection Program (EMSSP) is a partnership between BUSM, CAS and 14 undergraduate colleges that emphasizes early admissions and curriculum coordination. This partnership includes BUSM, Boston University undergraduate college, and historically black and Hispanic institutions. During the summers between their sophomore and junior years and their junior and senior years in college, the students accepted into this program attend Boston University Summer School and take undergraduate courses for credit toward their bachelors’ degree. In addition they receive instruction in time management, study skills, medical terminology, biochemistry, MCAT preparation and a seminar entitled Race, Ethnicity and Health. During their senior undergraduate year, the students attend Boston University and are enrolled in both undergraduate and medical school courses for which they receive dual credit. This program has been hailed by the AAMC as an example of the kind of efforts that medical schools can make to increase minority enrollment.
The **Modular Medical Integrated Curriculum (MMEDIC)** and the **Engineering/Medical Integrated Curriculum (ENGMEDIC)** accept exceptionally intelligent and accomplished Boston University students to the School of Medicine at the end of their sophomore year and facilitate the transition from undergraduate to medical studies. The MMEDIC Program, developed in 1977, integrates elements of the first year of the medical school curriculum into the junior and senior years of undergraduate studies. The applicant pool, comprised of Boston University undergraduates who have completed two years of college studies, including at least one year at Boston University, are primarily from the College of Arts and Sciences and Sargent College of Health and Rehabilitation Sciences. Approximately 28 students have applied annually to the program and 9 have enrolled. The mean GPA of entering classes has been 3.72. We know of only one such early assurance program at a peer institution (Tufts University); no data are available for comparison.

The ENGMEDIC Program, developed in 1990, also integrates elements of the first year of the medical school curriculum into the junior and senior years of undergraduate studies. The applicant pool comprises Boston University undergraduates who have completed two years at BU in Biomedical Engineering. For the past ten years, 3-8 students have applied to the program each year and 0-4 students have enrolled. The average GPA of entering classes has been 3.76. We know of no comparable programs at our peer institutions.

**10-year plan:** We shall strive to maintain the excellent preparation that students in our early assurance programs receive for medical school. This may necessitate changes in the curricula of the programs, as premedical requirements are currently under national review. We hope to develop a program in which alumni of our Early Selection Pathways serve as mentors to current students in the programs. Such a mentorship program will not only enhance our students’ understanding of the evolving nature of the field of medicine, but enable our alumni to reconnect with the University.

**Metrics:** applications, diversity of students, selectivity, yield, college boards, MCATs, GPA, BUSM grades, USMLE and residency evaluations.

**4b. Assessment of graduate research programs (masters and doctorates):**

The graduate programs of the medical school are administered through the Division of Graduate Medical Sciences, and comprise PhD training programs, Masters in Medical Sciences Program (MAMS), and the Professional Masters.

**PhD programs:** All the basic science departments, as well as the departments of Pathology and Medicine offer a PhD. Interdisciplinary degrees are offered in Cell and Molecular Biology, Immunology, Molecular Medicine, Biomedical Neurosciences, Genetics and Genomics, Behavioral Neurosciences and Medical Nutritional Sciences. Twelve active training grants support 47 pre-doctoral students (representing ~25% of the student body). In the 2009-10 academic year, 5 new (or renewal) applications were submitted (still pending) – in the areas of Cardiovascular Biology, Inflammation, Biology of the Lung, Molecular Biophysics and Structural Biology, Biology of Aging, and Molecular Medicine. Many of our training programs enjoy a long history of success, for example the Biology of Lung Program is in its 34th year of funding, Metabolism, Endocrinology and Obesity – 33rd year, training in the Biochemistry of Aging – 23rd year, Training in Blood Diseases and Resources – 28th year, Research program in Immunology- 20 and training in Bimolecular Pharmacology – 11th year. Given the rigor of the T32 review process, we believe this success speaks to the quality of the students, the training faculty and the training environment. Average GRE scores have remained steady at ~1230 (verbal and quantitative). Our programs are competitive based on number of applications (~567/yr), our selectivity (18%) and our yield (36%).

BU enjoys a strong **MD/PhD program**, which is now even stronger given the commitment to fully fund medical school tuition as well as stipend support for the graduate school years. Students in this program participate in special meetings, seminars and a retreat as well as in national conferences that focus on physician scientist training.

The cross-campus Neuroscience Graduate program will be launched this year, with leadership and faculty from both campuses involved in crafting the new program.
The DGMS will undergo a full strategic planning process in 2010-2011 to allow the new Associate Provost to experience a full academic year. However, some key changes have already been implemented. We have established a first year central funding model where the Division manages the stipend allocation for all 1st year PhD students after which they are supported by their program/department through T32 or PI (RO1) grants. All graduate programs will undergo a scheduled institutional review. The metrics considered include assessing time to degree, tracking student’s publication productivity, mentor funding, presentation(s) at regional and national meetings and outcomes such as career path of former students. A data management system is under development to facilitate student tracking, which will be useful in program review as well as assisting in grant applications and help leverage other university affairs (e.g. alumni activities).

10 Year Plan: We will use the data base and tracking metrics to evaluate programs on a regular basis and prepare to offer a dynamic set of program initiative that may necessitate consolidation of some programs, elimination of others and development of new, cross cutting interdisciplinary efforts that will offer student training in emerging areas. We will develop pipeline programs to attract more minority and disadvantaged students to our graduate programs. We will offer a wide array of professional development opportunities to our graduate student and postdoctoral community

Metrics: applications, diversity of students, selectivity, yield, GPA, GMS grades, position and post doc placements evaluations.

4c. Assessment of professional graduate programs:

MD Program: Although many would question the authority of US News and World Report US and Global rankings, among American Medical Schools, BUSM is ranked 35 in their US ranking and 16th in their global rankings. (BUSM is ranked 35, between Dartmouth and Brown despite BUSM's two fold superiority in NIH dollars to Dartmouth and three-fold advantage over Brown.) We had more than 11,000 applications for ~140 four year MD program slots for the 2010 class. The median MCAT for the class entering 2009 was 10.7 and GPA 3.65. Fewer than 1% per year withdraw or are dismissed. Twenty percent of the students are from ethnic groups under represented in medicine. Students score about average on licensing boards and compete well for outstanding residencies nationally, with a significant number matching in the most competitive specialties and programs.

MD Program 10 Year Goals:

We will continue our commitment to recruiting students from diverse backgrounds who exceed national measured scholastic norms and who have demonstrated a commitment to serving others. We will facilitate their mastery of the health sciences with the most effective didactics and pedagogy measured by national exam performance and resident director and post doc evaluations. We are committed to continuous quality improvement in our MD and health sciences curricula.

Increased educational value includes not only scholarships and stipend support, but also improved educational effectiveness. We must measure educational value to reduce student costs (e.g. student residence, scholarships, and tracking outcomes of our educational programs). BUSM will provide faculty training and support educational and pedagogical research and critically evaluate the way we teach to create best practices (evidence based pedagogy). Where appropriate and effective, we will expand the use of technology in teaching.

The school is strengthening its tracking and reporting capacities and is assembling an educational evaluation dashboard. Inter-institutional comparisons include eight of the eleven BU peers that have medical schools: Columbia, Emory, George Washington, New York University, Northwestern, University of Pennsylvania, University of Southern California, and Tufts.

MD Program Metrics: Applications, diversity of students, selectivity, yield, MCATs, grades, USMLE, faculty assessments and residency evaluations.

Master of Arts in Medical Sciences Program (MAMS)
Designed to enhance the academic records of students who have earned a B.A. degree and have completed all premedical requirements, this program provides potential medical school applicants with needed prerequisite and actual medical school courses. Students enter the program with at least a MCAT of 25 and a mean grade point average of 3.2. The didactic curriculum in the fall and spring semesters is followed by a capstone thesis requirement that may be completed over two summer sessions. Internal studies reveal a high success rate (~85%) for eventual matriculation into allopathic or osteopathic medical schools, PhDs, attorneys and physician assistants.

**10 Year Plan:** We will use the database and tracking metrics to evaluate program success including percent matriculation into allopathic and osteopathic medical schools as well as dental school and PhD programs. We will implement evaluation tools to continue to improve the program.

**Metrics:** applications, diversity of students, selectivity, yield, GPA, position and medical, dental and graduate school placements.

**Professional Masters Programs**

A decade ago, the Division of Graduate Medical Sciences (GMS) recognized and responded the nation's needs for health care delivery and other biomedical disciplines needed at the Master’s training level. In some cases, the need was due to a lack of trained professionals in the discipline (e.g. mental health professionals), and for others, professional training in the field above the level of technical training was simply did not exist (e.g., biomedical imaging).

GMS developed a series of Professional one to two year Master’s programs that would fill the current and emergent needs of the country. The Masters in Mental Health Counseling and Behavioral Medicine created in 2002 was the first in the country to base a Mental Health Program within a medical school, emphasizing behavioral medicine, neuropsychology and cognitive neuroscience toward the goal of “evidence based” practice. The program applicants have GRE's > 1200 with excellent GPA's, and placement in major teaching hospitals, state public health service, and private practice. With a graduation record of over 95%, most go on to receive full licensure in Mental Health Counseling.

Our Master’s programs in Biomedical Imaging, Biomedical Teaching (Vesalius) and Health Crisis Management fulfill critical national needs in biomedical imaging, teaching of the biomedical sciences in medical and related professional schools, and health crisis managers at the local, state and national levels. Programs in Nutrition, Genetic Counseling, and Clinical Investigation are well established, and have served as models for many other programs nationally, and, in some cases, internationally. Genetic Counseling is highly competitive and routinely receives about 20 applications for each available slot in class. The Biomedical Forensics program just received full accreditation for 5 years from the Forensic Science Education Programs Accreditation Commission (FEPAC), and Genetic Counseling, Mental Health and Behavioral Medicine programs are also fully accredited.

**10 Year Plan:** To continually assess and evaluate MA/MS programs to ensure that they are fulfilling their goals of providing students with a first rate preparation for entry into a health profession field that serves the national good. This is likely to result in the elimination of some programs and the development of new ones, as the changing landscape of health care delivery emerges. We are considering a Physician’s Assistant Program, as well as MA programs in the Neurobiology of Aging and in the Neurobiology of Education.

**Metrics:** student placements, program grants, travel awards, student research publications.

**4d. Other academic programs.**

CityLab is a very successful pre-college enrichment program in the biomedical sciences at BUSM that began in 1991 to address the critical need for improved science and biotechnology education. Graduate biomedical science programs at US universities attract dwindling numbers of American applicants and some well known programs have none at all, principally because the US educational system does a poor job of stimulating and preparing students for scientific careers. Meanwhile, the demand for capable scientists at all levels is soaring. CityLab has the power to improve the science awareness and readiness of students in the US, thus helping to
ameliorate an alarming trend that threatens our future economic strength.

CityLab comprises two major components. The first program is the highly popular daily visits to CityLab or the MobileLab, a forty-foot mobile laboratory, in which students and their teachers participate in hands-on problem-based laboratory investigations. The waiting list is one year for these visits. CityLab also provides teacher training/enrichment programs, a summer program, and an academic year program for high school students. The second program is CityLab Academy, a nine-month, full time transitional program for at-risk high school graduates seeking higher education and job skill training in biotechnology. Once graduated, these individuals find employment in the biotechnology field.

10-year plan: We expect to maintain our present level of support from various public and private agencies, but because funding from these sources is intended to provide seed money for new programs, support of ongoing operations is not guaranteed and may require substantial philanthropy.

Metrics: development income, student applications, diversity of students, selectivity, yield, grades, faculty assessments, job placements and employer evaluations.

4e. Interdisciplinary Educational Initiatives:

BUSM participates in a number of interdisciplinary degree programs. Combined MD/PhD programs include a PhD offered either through a department in BUSM’s Division of Graduate Medical Sciences or through the School of Engineering. The MD/MPH program is provided in concert with our School of Public Health and the MD/MBA program, with the School of Management. At any one time, approximately 120 students are involved in one of these combined MD degree programs.

The Division of Graduate Medical Sciences also offers several combined masters degrees, e.g. a MA in Medical Sciences combined with either an MPH, MBA, or MA in Mental Health. Currently approximately 25 students are pursuing these combined masters degrees.

Students from 8 different BU colleges also cross-register and take courses at BUSM. In the past year, 140 students pursued such cross-disciplinary training. Their “home colleges” included Arts and Sciences, Engineering, Management, Sargent College, Education, Social Work, University Professors, and the Graduate School of Arts and Sciences.

In addition to educational programs, biomedical research is central to the BUSM mission, the base for much of our academic enterprise, and ever more interdisciplinary in nature. Interdisciplinary training is strong at BUSM and vital to its success, reputation, and impact. Many formal academic programs at BUSM are nucleated by institutional training grants from the NIH, T32 awards. These awards train predoctoral PhD and MD/PhD students, MD and MD/PhD subspecialty fellows, and PhD and MD/PhD postdoctoral fellows.

At present, BUSM hosts at least 11 NIH T32 training grants, including (alphabetically)

- Biology of the Lung: A Multidisciplinary Training Program,
- Multidisciplinary Training in Cardiovascular Research,
- Neurobiology and Neuropsychology of Aging,
- Pre- and Postdoctoral Training in Biochemistry of Aging,
- Postdoctoral training in Post-traumatic Stress Disorders,
- Research Training in Blood Diseases and Resources,
- Research Training in Immunology, Rheumatology Training,
- Training in Biomolecular Pharmacology,
- Training in Cardiovascular Biology: Predoctoral, and
- Training Program in Host Pathogen Interaction.

Each of these programs is remarkably interdisciplinary in nature. For example, for the largest T32 program at BUSM (Biology of the Lung: A Multidisciplinary Training Program), the NIH provides nearly a million dollars annually to faculty spanning 5 different BUSM Departments and 3 other BU schools, for the education of 6 predoctoral and 11 MD or PhD postdoctoral trainees per year. This program bridges scientific disciplines of bioinformatics, genomics, molecular biology, biochemistry, cell biology, developmental biology, immunology,
microbiology, physiology, regenerative medicine, clinical trials, clinical outcomes research, engineering, and epidemiology. Trainees are exposed to all of these disciplines, are trained to expertise in multiple disciplines, and are guided towards research projects relying on interdisciplinary approaches. The interdisciplinary nature of this training is typical of the many T32 programs at BUSM.

Another formal BUSM academic training program is the CTSI sponsored K30 style Clinical Research Training (CREST) Program. Through the CREST program, post-doctoral trainees with a doctoral degree (MD, DDS, DMD, or PhD) in any of the diverse health sciences disciplines receive formal training leading to a Master’s degree from either BUSM or BUSPH. The CREST Program focuses on clinical research including epidemiology, clinical epidemiology, health services research, biobehavioral research, and translational research, and this clinical research training complements prior and/or ongoing training in other disciplines (e.g., cardiovascular, pulmonary, or informatics research) to produce interdisciplinary researchers poised to make clinically relevant discoveries.

Mentoring of T32 and other interdisciplinary trainees at BUSM is aided by Graduate Medical Sciences’ commitment to Fair Expectations following AAC guidelines and support for a formal postdoctoral fellow organization assembling across disciplines.

10 year plan: A number of initiatives are underway to enhance the interdisciplinary nature of the research and graduate educational programs on campus and leverage strengths on the CRC, but identifying those that will benefit most from key investments will be crucial. We anticipate increased investment in new research areas, especially on those that are of high priority to the medical campus (emerging infectious diseases, cancer, cardiovascular diseases, and neurosciences), but identifying areas within these disciplines where we have a competitive advantage and can develop unique and sustainable strengths is essential.

Our goal in the next decade will be to develop new Integrative Research Programs so that, for example, a discipline such as Nanomedicine would integrate Nanotechnology and Medicine. Similarly, Cancer Immunology will integrate a newly envisioned National Cancer Institute designated Center and our strong program in Immunology. We will also work to channel basic research discovery into the CTSI for translational initiatives and technology development.

We would need to develop the infrastructure to support these interdisciplinary initiatives, and to reduce barriers to collaborations across units. Expanding core services and improving their visibility and access to all faculty would require significant new investment. A key infrastructure need is and will continue to be research computing infrastructure and support, best centralized in collaboration with the CRC to avoid duplication. Finally, as the interdisciplinary research expands, developing and supporting new interdisciplinary training programs will be crucial to provide the academic infrastructure of the research enterprise. Recruiting trans disciplinary faculty with research in the interstices between disciplines may also be important.

Metrics: Number of and success of inter departmental and cross school degree programs and training grants as measured by applications, selectivity, yield, GPA, GRE or other national metric, placement in positions post graduation. (See also separate metrics for interdisciplinary research below.)

5. Facilities.

Annually the Office of Facilities Management updates the Boston University Medical Campus Facility Assessment by Major Building Systems for all facilities that are owned and leased (copy attached). This macro level assessment is based on the twelve major building systems with a final overall assessment for each facility. In addition to this macro level assessment the Office of Facilities Management tracks, forecasts and prioritizes the annual predictive/preventive maintenance and the longer term deferred maintenance for each of these facilities.

The senior leadership on the Medical Campus working with Facilities Management annually identifies strategies for funding predictive/preventive and deferred maintenance issues. Often some of the predictive/preventive maintenance issues are accomplished through the operating budget, and those deferred maintenance issues, like the Evans central elevators and chiller plant are done through special appropriations.
10 Year plan: Priorities include maintenance of current buildings worth an investment, and planned replacement for buildings at the end of their useful life.

In addition to construction of Student Residence 1, we have preliminary plans for Student Residence 2, a below Talbot 500 seat amphitheater, a D Lot Classroom building, and BioSquare Research Building E, all possibilities within a 10 year time frame, depending on variables such as the class sizes of the three schools and the NIH budget.

Metrics: Research F&A per sq ft, peak and average use of current classrooms, frequency of renting larger venues for groups of >320 (our current largest auditoria), funding for preventative maintenance, faculty satisfaction.
### Boston University Medical Campus Facility Assessment by Major Building System Matrix: 1 Feb, 2010

**Owned - Maintained and/or Fully Occupied Buildings**

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**Ranking:** 1= Poor; 5= Average; 10= Very Good

**Note:**
- K-building is currently being studied for a renovation on the 1st, 2nd, 6th and 7th floors including the replacement of AHU on these floors & building automation to DDC; has just finished centralizing the building exhaust system and scheduled to replace 6th & 7th floors AHU with full DDC controls in Spring 2010.
- L-Building is renovating the L-2 classrooms which will include replacement of the 3rd AHU which supplies air to 1st, 2nd, 3rd & 4th floor, replacing DDC controls on the 2nd floor only.
- X-Building is in the process of completing installation of 1st floor building automation.
6. Other infrastructure.

Educational Support Infrastructure

- **Instructional Technology Systems & AV Systems** (e.g., Echo360, Smart Technologies, Blackboard, Turning Technologies and associated hardware) require continuous investment in new learning technologies to keep current with pedagogical needs. Broader availability of technology throughout the school requires ongoing investment in classroom upgrades, student computer labs, etc. Staffing (technical, production and administrative support) also is required to support this effort. To address the evolving convergence of education and information technology and eliminate organizational barriers, the Educational Media Center management is actively engaged to develop a University-wide standard for classroom design and service.

- **Resource 25**, the system utilized to support the scheduling and management of instructional space, is more than adequate, and we continue to invest in keeping it current to ensure optimal space utilization. Educational Media Center monitors and incorporates Resource 25 technology upgrades in their year-to-year planning and budget management.

- **Learning and Work Environments**: Access to electrical power outlets in common spaces, learning spaces, and study spaces are falling behind the continued proliferation of laptops and other mobile electronic devices. Similarly many of the classroom furnishings (e.g., tables, chairs) need replacement. Given the multifaceted instructional modalities within BUSM, innovative surface materials/design and flexible functionality is required to support traditional and non-traditional classroom activities. In addition, as student populations grow and the use of laptops and other mobile devices as learning tools intensifies, so does the need for student lockers to store personal belongings (e.g. medical equipment, laptops, etc.) in a secure and electrically connected environment. Active planning, in support of these learning and work environment needs, occurs in the BUMC Group on Educational Resources and the Instructional Space Planning Working Group. As instructional space is renovated or new space developed, we are addressing the needs noted above.

BUMC IT Network & Systems Infrastructure

The nature of the BUMC IT Network & Systems Infrastructure in support of the BUSM academic mission must continuously evolve to support effectively the expanding and evolving needs of medical education and research. The campus network will continue to experience ongoing demands related to a continued shift in teaching towards on-line curriculum that includes in class sharing and collaboration, simulations, recorded class content, online testing, and high definition video conferencing. In addition, systems and network infrastructure must expand to support research computing in support of bioinformatics and visualization.

Our plans include ongoing upgrades to the network and systems infrastructure (e.g., storage, servers, etc.). We must support enhancements to meet performance, security, and greater resiliency to accommodate new powerful portable computing devices, applications and research computing initiatives. Presently as space is developed or renovated, we incorporate these enhancements. Furthermore, our plans include the adoption of sophisticated network management tools that correlate trouble events that impact applications related to the learning experience and that span the associated elements of the enterprise network and servers that drive them.

Research Space Infrastructure

We plan a three school Task Force on Characterization, Development, and Utilization of Wet-Lab, Dry Bench, and Clinical Research Space (as we just completed with Instructional Space Task Force).

Security Infrastructure

With the growing investment in and reliance on classrooms and personal computing technologies and a trend towards more open and flexible learning spaces, security and monitoring systems are becoming increasingly important. Cultivating central control, while allowing local access to our learning spaces, maintains
accessibility, protects assets and keeps our user population safe. BUMC has the technological and management expertise to support this security model, so it a matter of factoring this infrastructure, such as comprehensive network security and asset management control systems, into our classrooms and study spaces as they are developed or renovated.

10-year goals: Our goal is to maintain state of the art infrastructure benchmarked against peers to support effectively the academic mission at the lowest possible cost. This requires dynamic planning and continuous upgrading to meet expanding academic programmatic needs, ideally leveraging BU's economy of scale. Regional purchasing may also provide better value. Effective leaders/managers with appropriate financial resources and a commitment to extracting value will employ skilled committed staff to maintain/develop state of the art space and technology to support the academic mission of the School of Medicine.

Particularly important will be an investment in IT leadership and research infrastructure.

Measurable outcomes: Student satisfaction with facilities and technology on the AAMC graduation questionnaire compared to peers, faculty satisfaction with learning and research environment, research success in targeted fields requiring high tech resources. Satisfaction with IT interface between BMC and BUMC.

7. Collaboration with other academic units

On the Medical Campus, the academic and research missions are interdependent. Thus faculty involved in robust interdisciplinary research programs supports the interdisciplinary educational initiatives described in section 4e.

The raison d'être of the NIH funded Clinical and Translational Sciences Institute (CTSI) is to foster collaborations between schools, campuses and universities. The CTSI provides infrastructure support targeted at enhancing interdisciplinary translational collaborations and supports a large pilot grant program to fund both early and established investigators for new and novel directions of study.

The Genome Sciences Institute had funded competitive interdepartmental seed grants to faculty bridging departments within the school and between the two campuses to further intensify the university wide focus on genetics. Faculty within the Biostatistics Program and the School of Public Health are fundamental to the genetics initiatives.

The Whitaker Cardiovascular Institute, which supports a pre-doctoral as well as a post-doctoral training program in Cardiovascular Biology, comprises 29 faculty affiliated with six BUMC or CRC departments. Each is vested in research programs directed toward understanding cardiovascular function from the basic sciences through translational and clinical medicine, including the internationally known Framingham Study.

The Immunology Training Program, which includes almost 30 faculty from five departments in the three BUMC schools, is already involved in nascent initiatives to develop a broader, trans campus program that would incorporate computational immunology into the University-wide systems biology initiative being developed out of the Bioinformatics Program on the CRC and its collaborators at BUMC. These faculty also integrate with faculty across the campuses to study inflammation, a condition that underlies many disease processes and additionally includes faculty from the School of Dental Medicine and the Cardiovascular Institute.

The still young and emerging Pathogenesis Program already engages faculty in a number of departments within two BUMC schools, including faculty in the National Emerging Infectious Diseases Laboratories. Program faculty are also collaborating with CRC faculty in several departments within Arts and Sciences and Engineering, which will facilitate the program's cross-disciplinary mission to train new scientists to bring cutting edge approaches and tools to the development of novel diagnostics, therapeutics and vaccines for treatment of infectious diseases.

A number of initiatives further leverage current strengths on the BUMC and CRC campuses to develop unique research programs. For example, faculty from both campuses with existing interests in Medical Informatics,
as it relates to the improvement of delivery of patient care, are currently meeting to identify research areas, such as new approaches to Health Care Reform.

Faculty from a number of BUMC departments are also working with CRC faculty to identify key target areas for development in Integrative Biology/Systems Biology.

The Department of Medicine, through its Evans Center for Interdisciplinary Biomedical Research, has provided funding to Affinity Research Collaboratives, which are designed to promote the interactions of faculty from various disciplines throughout Boston University into addressing novel biomedical problems, from the basic sciences through translational initiatives. Initiatives in regenerative medicine, the interface of metabolic and cardiovascular diseases, and nanomedicine, which already brings faculty from the CRC and BUMC together, are targeted for support, as is the area of Medicinal Chemistry, which brings the faculty in the Center for Chemical Methodology and Library Development together with faculty on the Medical Campus for the study of metabolic processes and viral diseases.

The study of neurobiology is already an area that has effectively bridged the campuses through the BU Center for the Neurosciences.

In addition to focusing on the study of diseases and disease processes that are endemic in our patient populations in Boston Medical Center, especially within the underserved, BUSM faculty are actively involved in the Global Health Initiatives that form an important component of the BU strategic plan, especially as they are focused on infectious diseases, internal medicine and pediatric diseases, as well as genetic polymorphisms that are central to disease processes. These examples of the interdisciplinary programs supported and staffed by Medical Campus centers of excellence, including the Arthritis, Pulmonary, Women’s Health and Cancer Centers.

10 Year Goals: We will invest in new research areas, especially on those that are of high priority to the medical campus (emerging infectious diseases, cancer, cardiovascular diseases, and neurosciences), but identifying areas within these disciplines where we have a competitive advantage and can develop unique and sustainable strengths is essential.

We will channel basic research discovery into the CTSI for translational initiatives and technology development. To support the research, we will develop the infrastructure to promote interdisciplinary initiatives, and minimize barriers to collaborations across units. We will continue to emphasize our focus on health disparities and diseases of the poor and otherwise marginalized patient populations.

We will invest in expanding core services and improving their visibility and access to all faculty. Research computing infrastructure and support, a key infrastructure need, would be developed with the CRC to achieve economies of scale and avoid duplication.

If the NIH budget grows significantly, we will exceed the current laboratory and research space availability within 10 years, and would need to construct the already planned next BioSquare research building.

Finally, as the interdisciplinary research areas are expanded, we will develop and support new interdisciplinary training programs to leverage the research enterprise. We will develop or recruit faculty comfortable with working within the interstices between disciplines.

Metrics: Quality of the BUMC’s research programs as measured by publications in select journals, growth in research funding and accomplishments in comparison with peer institutions nationally and with the NIH budget, research faculty development, interdepartmental and intercampus collaborations, diversity of students and faculty, success in fundraising for research, and fostering interdisciplinary research. Increasing our faculty numbers in elite groups such as the National Academy of Sciences, Institute of Medicine, etc., should follow from increased visibility outside the institution.

8. Summary of Decadal plans.

a. Faculty: BUSM will recruit outstanding faculty, generally junior faculty, in targeted areas to enhance cross-disciplinary research in neuroscience, health disparities, cardiopulmonary disease and cancer.
We will further strengthen formal faculty development programs, support core facilities to improve faculty productivity and improve quality of academic life.

Although BUSM has been successful in recruitment of high quality individuals, competition to retain high quality faculty is continuous. Special attention needs to be paid to senior fellow to junior faculty retention. Outstanding individuals should be identified early in their fellowships. Philanthropy for start up packages and retention packages would enhance our competitive with other universities.

b. Undergraduate programs: We shall strive to maintain the excellent preparation that students in our early assurance programs receive for medical school. This may necessitate changes in the curricula of the programs, as premedical requirements are currently under national review. We hope to develop a program in which alumni of our Early Selection Pathways serve as mentors to current students in the programs. Such a mentorship program will not only enhance our students’ understanding of the evolving nature of the field of medicine, but enable our alumni to reconnect with the University.

c. Graduate research programs: We will use the data base and tracking metrics to evaluate programs on a regular basis and prepare to offer a dynamic set of program initiative that may necessitate consolidation of some programs, elimination of others and development of new, cross cutting interdisciplinary efforts that will offer student training in emerging areas. We will develop pipeline programs to attract more minority and disadvantaged students to our graduate programs. We will offer a wide array of professional development opportunities to our graduate student and postdoctoral community

d. Graduate professional programs

MD Program: We will continue our commitment to recruiting students from diverse backgrounds who exceed national measured scholastic norms and who have demonstrated a commitment to serving others. We will facilitate their mastery of the health sciences with the most effective didactics and pedagogy measured by national exam performance and resident director and post doc evaluations. We are committed to continuous quality improvement in our MD and health sciences curricula.

Increased educational value includes not only scholarships and stipend support, but also improved educational effectiveness. We must measure educational value to reduce student costs (e.g. student residence, scholarships, and tracking outcomes of our educational programs). BUSM will provide faculty training and support educational and pedagogical research, critically evaluate the way we teach to create best practices (evidence based pedagogy). Where appropriate and effective, we will expand the use of technology in teaching.

The school is strengthening its tracking and reporting capacities and is assembling an educational evaluation dashboard. Inter-institutional comparisons include eight of the eleven BU peers that have medical schools: Columbia, Emory, George Washington, New York University, Northwestern, University of Pennsylvania, University of Southern California, and Tufts.

MMS: We will use the database and tracking metrics to evaluate program success including percent matriculation into allopathic and osteopathic medical schools as well as dental school and PhD programs. We will implement evaluation tools to continue to improve the program.

Professional Masters: To continually assess and evaluate MA/MS programs to ensure that they are fulfilling their goals of providing students with a first rate preparation for entry into a health profession field that serves the national good. This is likely to result in the elimination of some programs and the development of new ones, as the changing landscape of health care delivery emerges. We are considering a Physician’s Assistant Program, as well as MA programs in the Neurobiology of Aging and in the Neurobiology of Education.

e. Other academic programs:

City lab: We expect to maintain our present level of support from various public and private agencies, but because funding from these sources is intended to provide seed money for new programs, support of ongoing operations is not guaranteed and may require substantial philanthropy.

f. Interdisciplinary initiatives:
A number of initiatives are underway to enhance the interdisciplinary nature of the research and graduate educational programs on campus and leverage strengths on the CRC, but identifying those that will benefit most from key investments will be crucial. We anticipate increased investment in new research areas, especially on those that are of high priority to the medical campus (emerging infectious diseases, cancer, cardiovascular diseases, and neurosciences), but identifying areas within these disciplines where we have a competitive advantage and can develop unique and sustainable strengths is essential.

Our goal in the next decade will be to develop new Integrative Research Programs so that, for example, a discipline such as Nanomedicine would integrate Nanotechnology and Medicine. Similarly, Cancer Immunology will integrate a newly envisioned National Cancer Institute designated Center and our strong program in Immunology. We will also work to channel basic research discovery into the CTSI for translational initiatives and technology development.

We would need to develop the infrastructure to support these interdisciplinary initiatives, and to reduce barriers to collaborations across units. Expanding core services and improving their visibility and access to all faculty would require significant new investment. A key infrastructure need is and will continue to be research computing infrastructure and support, best centralized in collaboration with the CRC to avoid duplication. Finally, as the interdisciplinary research expands, developing and supporting new interdisciplinary training programs will be crucial to provide the academic infrastructure of the research enterprise. Recruiting trans disciplinary faculty with research in the interstices between disciplines may also be important.

g. Facilities

Priorities include maintenance of current buildings worth an investment, and planned replacement for buildings at the end of their useful life.

In addition to construction of Student Residence 1, we have preliminary plans for Student Residence 2, a below Talbot 500 seat amphitheater, a D Lot Classroom building, and BioSquare Research Building E, all possibilities within a 10 year time frame, depending on variables such as the class sizes of the three schools and the NIH budget.

h. Other infrastructure:

Our goal is to maintain state of the art infrastructure benchmarked against peers to support effectively the academic mission at the lowest possible cost. This requires dynamic planning and continuous upgrading to meet expanding academic programmatic needs, ideally leveraging BU's economy of scale. Regional purchasing may also provide better value. Effective leaders/managers with appropriate financial resources and a commitment to extracting value will employ skilled committed staff to maintain/develop state of the art space and technology to support the academic mission of the School of Medicine. Particularly important will be an investment in IT leadership and research infrastructure.

9. Summary of Metrics for evaluation of progress

a. Faculty:

Research & Scholarship: publications in key journals, NIH grants, patents, H Index, faculty honors and prizes

Education: MDs: Residency placements, residency program directors satisfaction with graduates’ performance, USMLE scores. GMEs: positions after masters programs and Post Doc placements

Excellence in care: Rankings of programs, NIH Center grants.

b. Undergraduate programs: applications, diversity of students, selectivity, yield, college boards, MCATs, GPA, BUSM grades, USMLE and residency evaluations.

c. Graduate research programs: applications, diversity of students, selectivity, yield, GPA, GMS grades, position and post doc placements evaluations.

d. Graduate professional programs
MD Program Metrics: Applications, diversity of students, selectivity, yield, MCATs, grades, USMLE, faculty assessments and residency evaluations.

MMS Metrics: applications, diversity of students, selectivity, yield, GPA, position and medical, dental and graduate school placements.

Professional Masters: student placements, program grants, travel awards, student research publications.

e. Other academic programs:

**City lab:** development income, student applications, diversity of students, selectivity, yield, grades, faculty assessments, job placements and employer evaluations.

f. Interdisciplinary initiatives:

Number of and success of inter departmental and cross school degree programs and training grants as measured by applications, selectivity, yield, GPA, GRE or other national metric, placement in positions post graduation. (See also separate metrics for interdisciplinary research below.)

g. Facilities

Research F&A per sq ft, peak and average use of current classrooms, frequency of renting larger venues for groups of >320 (our current largest auditoria), funding for preventative maintenance, faculty satisfaction.

h. Other infrastructure:

Student satisfaction with facilities and technology on the AAMC graduation questionnaire compared to peers, faculty satisfaction with learning and research environment, research success in targeted fields requiring high tech resources. Satisfaction with IT interface between BMC and BUMC.

10. Five-year goals

1. Enhance Education value

We will continue our commitment to recruiting students from diverse backgrounds who exceed measured scholastic norms and who have demonstrated a commitment to serving others. We will facilitate their mastery of the health sciences with the most effective didactics and pedagogy measured by national exam performance and resident director and post doc evaluations. Increase educational value includes not only scholarships and stipend support, but also improved educational effectiveness. We are committed to continuous quality improvement in our MD and health sciences curricula.

We must also increasingly address and measure educational value to reduce student costs (e.g. student residence, scholarships, and tracking outcomes of our educational programs). BUSM will provide faculty training and support educational and pedagogical research, critically evaluating the way we teach to create best practices (evidence based pedagogy). We will facilitate faculty educational research with biostatistics support and medical education research cores. Where appropriate and effective, we will expand the use of technology in teaching.

We will develop an umbrella PhD program wherein incoming PhD students determine their specific research interest after first year of common course work.

**Metrics:**
GPAs, GREs, MCATs, USMLE, NBME Shelf Exam scores, residency evaluations
Student applications, completed applications, selectivity & yield
Percentage increase and absolute cost in tuition vs. peers
Total annual cost for MD, PhD, MD/PhD, MAs
Growth in scholarship & stipend support
Training grants
Post-Graduate Questionnaire

2. Invest in the Research Enterprise including Cores
BUSM will develop or recruit outstanding investigators and will support and strengthen our federally funded research enterprise.

To maximize resources for these investments, we must eliminate work that does not contribute to value (lean six sigma concepts, http://www.army.mil/ArmyBTKC/focus/cpi/tools3.htm). Examples of current duplication of effort and expenses include parallel BUMC & BMC grants administration offices, etc.

We should especially:

- Capitalize on the unique collegial atmosphere at BU to promote research collaboration. We will maximize leverage of our research investments in program development, cores, interdisciplinary programs, NEIDL, CTSI, etc.
- Improve the culture of safety and compliance.
- Strengthen collaborations between BMC an BUSM and between BUMC and the Charles River Campus.
- Standardize research administration between BUMC & BMC to the extent possible.
- Incorporate research opportunities based on our role in serving disadvantaged patient populations.

We like all other academic medical centers will:

- Invest in Centers of Excellence (e.g. NEIDL, Successful Aging, Addiction and Substance Abuse)
- Enhance Patient Recruitment and Population Research
- Support Medical Informatics
- Take advantage of new funding opportunities for research on effectiveness of clinical interventions.
- Implement mechanisms to share information: regular e-mail notices of medical center events, seminars, accomplishments, grant opportunities.
- Create mechanisms for anticipating new research opportunities and bringing people together rapidly to take advantage of new funding sources.
- Attract philanthropy to provide institutional seed funding to promote interdisciplinary research and collaboration.

3. Organize Information Systems & Technology

Based on a recent Huron study of IT on the Charles River and Medical campuses, the Medical Campus has a relatively small cohort of central IT personnel and the larger than usual number of IT personnel imbedded in departments and administrative units, generally justified by the lack of central services.

Huron estimates that BUMC is spending more for IT services than necessary and is receiving fewer services given the cost, because of the lack of economies of scale and particularly the lack of specialization provided with the larger central IT group typical of Academic Medical Centers.

Huron recommends that BUMC consolidate many IT services centrally, some with BU (e.g. outsourcing of servers), and recruit appropriate IT leadership and specialists to support its educational, administrative, and research computing missions. We have posted a position for a Director of BUMC IT.

Metrics: Return on investment in terms of faculty satisfaction and efficiency.

4 Optimize Space Utilization

Continue our three school Instructional Task force to plan optimal instructional space.

- Enhance, improve or build instructional space to facilitate effective pedagogy and to attract outstanding faculty and students. Increase instructional space including small group and break out rooms to facilitate further innovations to the curriculum, with space to hold large Academies events for students and faculty and other activities.
- **Upgrade the Clinical Skills & Simulation Center** and provide further simulation resources to improve patient safety, prevent errors and also serve as a means to attract students to BUSM. Integrate the Clinical Skills & Simulation Center with the hospital.

**Appoint and charge a similar three school Research Space Committee** to optimize use of research and core (e.g. animal labs) space, to anticipate short and long term growth potential.

**Improve facilities to enhance our academic community.** Student, post doc and junior faculty housing would create a permanent revenue stream.

- Create and build student housing, at or below market rate to improve education, community and to decreasing student cost of living and debt, ideally funded by major gifts to offset construction costs.
- Build community space to promote interaction between students, faculty and staff of BUSM, SPH & SDM.

### 5. Enhance Diversity

Based on visionary leadership of the founders of both BUSM and BU, distinctive in academia at the time, we have welcomed diversity among both faculty and students for more than 150 years. BUSM graduated the first black woman MD and the first Native American MD, and has had such distinguished African Faculty faculty as Drs. Solomon Carter Fuller and Louis Sullivan.

We have already established pathway programs with historically black and Hispanic undergraduate colleges and a history of diversity among BUSM students and MD faculty.

There are too few minority PhD medical school faculty and PhD trainees nationally. We have taken steps to increase the numbers of such trainees in our programs.

In 2008, we chartered an ad hoc, medical campus committee to provide guidance in enhancing diversity on campus.

BUSM defines diversity broadly, invoking both our historical commitments, and the educational imperative of providing a diverse educational environment. The learning environment is enriched by diversity of perspective, background, education, life experience, culture, language, gender, race, and ethnicity. As diversity is an indispensable element of the academic experience, achieving diversity in the faculty and student body is a core imperative.

BUMC has adopted the following initial goals recommended by the three school Committee on Diversity and Health Disparities.

BUMC will appoint three co-directors of Diversity and Multicultural Affairs to coordinate activities across the campus and integrate initiatives supporting diversity as part of the core missions. This office will establish and track metrics to determine if we are succeeding in our efforts at diversity. This office should:

- oversee centralized information sources and resources for recruiting URM students and faculty.
- be the primary portal for information for potential URM applicants looking for opportunities at BUMC.
- act as the clearing agency and warehouse for opportunities for career development (particularly for URM students and faulty) and serve as a resource for the community of color on campus (for all schools and training programs).
- link effectively with the Minority Recruitment Program sponsored by BMC for students and trainees. It should support all constituent organizations’ mission with regard to enhancement of diversity.

The three co-directors will be supported by a permanent committee on diversity chaired by one of the co-directors. BMC would be welcome to participate with representatives, particularly the Director of the Minority Recruitment Program and BMC’s senior diversity leadership.
All BUMC faculty searches be conducted according to the search guidelines outlined in BU policy for maximizing the possibility of enhancing diversity in the faculty.

The co-directors and the committee should develop a website which links all diversity initiatives and research opportunities, faculty postings and training grants. This should be utilized as both an internal resource as well as an external source for potential applicants.

All faculty should have mentoring plans, especially minority faculty. Mentoring experience should be included in criteria for faculty promotion. New faculty should have a written career plan that includes identification of mentors. The plan may change slightly over time but at least the young faculty member would have a broad blueprint with specific goals that can guide them up the academic ranks.

We already include quantifiable criteria to evaluate chairs in promoting diversity and mentoring.

**Metrics:** annually trends on women and underrepresented minority student and faculty numbers, as well as faculty recruitments and promotions.

6. Enhance Development

BUSM's largest sources of income are tuition and F&A, followed by clinical salaries and direct grant costs. Given that institutions invest ~10-20% of their research dollars over the income provided by F&A, and that we have made a commitment to controlling student tuition costs, investments for the programs above must come from expanded philanthropy.

We will expand the development office with clear performance metrics. Department and Center leadership needs to be involved with developing high quality program literature.

**Metrics:** Annual development dollars