

UB 2020:  
AN INTERIM REPORT TO THE UNIVERSITY AT BUFFALO  
COMMUNITY

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FEBRUARY 2005

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## EXECUTIVE SUMMARY

In May 2004, the University at Buffalo launched the most comprehensive and inclusive planning process in its history, designed to position UB among the nation's very best research universities. UB, the most comprehensive research university in the State University of New York system, is a proud member of the prestigious Association of American Universities — recognition that it is among the best of the best. The University at Buffalo, not intent on resting on its laurels, understands that in times of decreased public funding, only those universities that accept responsibility for determining their own futures will succeed in the very competitive 21<sup>st</sup> century.

We have come together through this strategic planning process to be not only proactive and progressive, but as importantly, to challenge ourselves to fulfill our exceptional potential. We also have proclaimed the strength of our commitment to our students, to scholarship and new research, and to excellence in public higher education.

As we begin this new chapter in our institutional history, we have defined academic excellence as the overarching principle that will guide us in all of our research, teaching, service, and creative activities. With this commitment to academic excellence, we will be able to:

- Bring the benefits of our research, scholarship, teaching, and creative activities to the members of our community so that the quality of their lives may be enhanced;
- Make public higher education a high priority at the local, state, and national levels;
- Take a leading role with technology transfer and other economic development activities in Western New York and throughout the state; and
- Convey the University at Buffalo's achievements and excellence to the academic world.

With this challenge before us, the University at Buffalo initiated parallel planning activities through focused unit SWOT (Strengths, Weaknesses, Opportunities and Threats) analyses, foci of excellence, and five planning groups: the Academic Planning Committee, the Academic Support Planning Committee, the Government, University, and Industry Task Force, the Bioinformatics Business Planning Task Force, and the Community Engagement Task Force. The planning activities, collectively known as UB 2020, have been designed to clarify UB's vision and define our institutional goals through the year 2020. By nurturing a university planning culture that values integrity, honesty, and transparency, UB will be able to consider and make informed decisions that will allow for meaningful opportunities for the future.

This goal-oriented process is assisting us, as an institution, in determining what our strategic strengths are; what challenges are obstructing our path towards excellence; and which areas (academic, academic support, business, and operations) are in need of improvement. Thus far, our faculty have identified 10 areas of strategic strength. These proposed areas include: (1) aging and chronic disease; (2) artistic expression and performing arts; (3) biodefense and response to catastrophic events; (4) civic engagement and public policy; (5) clinical sciences and experimental medicine; (6) literary, cultural, and textual studies; (7) information and computing technology; (8) molecular understanding of biological systems; (9) nanomaterials; and (10) bioinformatics and health sciences.

In the next phase of this strategic planning process, faculty will be able to comment upon, further develop, and crystallize the proposed strategic strengths through open, campus-wide meetings for each of the strategic strengths. Then we will develop vision statements and conduct further analyses on these strengths; afterward, we will implement administrative and operational plans to ensure that each strategic strength operates smoothly. Our plans will include governance structures, management systems, oversight functions, funding sources, and internal resources.

As we engage the campus in a discussion of academic excellence, we are contemplating a vision for undergraduate, graduate, and professional education. Through the efforts of the Quality of Education Team (a subcommittee of the Academic Planning Committee), guiding principles for undergraduate education have begun to take form. The Vice Provost and Dean of Undergraduate Education will continue this discussion with faculty, staff, and students from across the campus. Likewise, the Vice Provost for Graduate Education will be asked to lead the campus conversation with our faculty from across the graduate and professional spectrum to develop a vision for graduate and professional education. Through these combined efforts, our faculty will have the opportunity to articulate the ideal of a University at Buffalo education.

While the future growth of the University at Buffalo will be guided by an academic plan based on clearly defined strategic strengths, we cannot ignore the very important physical and operational elements of our campus and their role in achieving academic excellence. UB must have an infrastructure that supports the creation and dissemination of knowledge that uses the tools and technologies of the 21<sup>st</sup> century. Through the work of the Academic Support Planning Committee, we have learned that the campus is in need of several plans that can be used to guide the physical and operational maturity of our university. These plans include a long-term capital and facilities plan that aligns infrastructure additions to our academic plan; an all-funds budget and reporting system; and

a plan to use new technologies to improve the delivery effectiveness of many vital support services.

The task before us now is to understand the totality of all of this information and to put forth a plan for capitalizing upon these ideas in a way that is logical, appropriately sequenced and coordinated and that recognizes UB's ability to develop and implement them. While it is necessary to design infrastructures to move suggested initiatives forward, there are some actions that emerged through the broader UB 2020 process which reflect our need to be proactive, progressive, and collaborative that we implemented to date. These include:

- **The creation of a bioinformatics governance infrastructure;**
- **The Center for Computational Research has been integrated within the NYS Center of Excellence in Bioinformatics and Life Sciences to support further the high-performance computing needs of the campus;**
- **The classroom blitz that occurred during the winter break in which dozens of classrooms were repaired or upgraded;**
- **The initiation of a plan to increase Teaching Assistant (TA) stipends;**
- **The establishment of a pre- and post-research award strategic planning initiative;**
- **The establishment of a Student Response Center review team;**
- **The creation and initiation of an annual budget process; and**
- **The creation and initiation of a capital and space plan.**

As a concluding note, the purpose of this document is to communicate to the university community those identified areas of strategic strength that can be developed in order to significantly enhance the reputation and academic prominence of the University at Buffalo. While the final results of this strategic planning process will necessarily affect the university's budgetary, academic support, and facilities investments, it will not diminish the commitment to sustain the existing excellence of our research, scholarship, and creative activities as well as our undergraduate, graduate, and professional programs.

# SECTION I

## THE STRATEGIC PURSUIT OF ACADEMIC EXCELLENCE

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As a community, the University at Buffalo has made the conscious determination to define our own future. In order for UB to move beyond the very good institution it is today, to become one of the nation's premier public research universities, we must ensure that our academic mission – expressed as excellence – is the hallmark of all that we do.

With this objective achieved, UB will have enhanced its reputation, improved its institutional rankings, and broadened its national and international prominence. By increasing the reputation and prominence of a critical few multi-disciplinary academic strengths, UB will realize substantial institutional gains. Institutionally, as our reputation strengthens, we will be in the enviable position of recruiting and hiring some of the most distinguished and promising faculty members in the country and world. The best and most talented undergraduate, graduate, and professional students will also be drawn to embarking upon and continuing their educational careers at UB. These students will want to learn under the tutelage of faculty who are pushing the intellectual boundaries of their disciplines. With the University at Buffalo's reputation and national and international prominence widening, we will also witness competitive advantages in the broader funding arena.

Our strategic planning process will enable us to design an academic plan with a supporting, overarching campus master strategy – which are imperative for a major research university in the 21st century. This roadmap for UB's future will allow us to realize our full potential and to achieve academic excellence.

## SECTION II

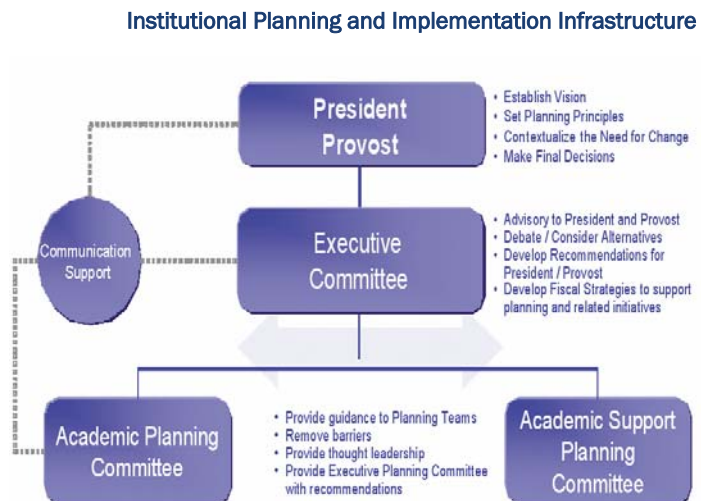
### ACADEMIC PLANNING: PROCESS

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The University at Buffalo's academic planning process is designed to produce an academic plan that builds upon strategic strengths and institutional priorities as well as to develop the support elements necessary to operationalize the academic

plan. The figure provides an illustration of the academic planning organizational structure.

The Executive Committee is charged with developing and implementing the strategic planning process through providing oversight, coordination, and recommendations for our university's strategic initiatives. It also serves as an advisory council for the UB president and executive vice presidents.



Two primary planning committees assist the executive committee in executing their task: the Academic Planning Committee and the Academic Support Planning Committee. These committees oversee the two primary functional divisions of the campus, as their names suggest. (For a more detailed review of the strategic planning process, please refer to [Appendix 1.](#))

Phase One of the strategic planning process was designed to provide the framework for an academic plan by identifying strategic strengths from which UB can build a foundation for academic excellence; and secondly, to identify the elements necessary to build a strong academic support infrastructure.



## SECTION III

### IDENTIFICATION OF STRATEGIC STRENGTHS

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A university's success is best measured by the scholarly contributions of its faculty, and the impact of those contributions upon the world we live in today. UB students live and work within an academic community that is constantly being informed and revitalized by new ideas, and they take part in research – within the sciences, humanities, or the professions – that is helping to shape the future of their chosen field of study. As UB students go forth to make their own contributions to the world, they, not unlike our faculty, translate knowledge into direct benefit to their communities. Through our strategic planning process, we determined that we must focus our intellectual energies and resources so as to define the university's intellectual, cultural, and economic impact in the 21<sup>st</sup> century.

To begin this process, a faculty group was constituted (the Foci of Excellence Team – a subcommittee of the Academic Planning Committee) to identify areas of strategic strength for the university. Subsequently, the Foci of Excellence Team evaluated 91 foci of excellence proposals that were submitted by the deans. Early in the subcommittee's deliberations, it became evident that the strategic strengths would require strong departments in order to succeed. In response, the Departmental Strengths subcommittee identified departmental strengths in academic research and creative activities as well as in collaboration, curricula, and planning processes. Further, this subcommittee was charged with identifying indications of strength based on national benchmarking data. In response to this call for information, 68 departmental strengths submissions were received.

The criteria and procedures for evaluation of potential strategic strengths included the following:

- Demonstrated excellence in scholarship and achievement;
- Committed leader;
- Well-funded and/or have the potential to be well-funded<sup>1</sup>;
- Involved in interdisciplinary research;
- Potential for national prominence;
- Demonstration of self-sustaining growth;
- Consistent with academic plans and priorities;

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<sup>1</sup> This criterion was important for those proposals that are capable of generating considerable external research funding, primarily from the sciences, medicine, pharmacy, and dentistry.

- Benefits current and future UB graduates;
- Relevance to external stakeholders (such as, business, industry, government, community); and
- Area in which we can excel.

As with the evaluation of potential strategic strengths, departmental strengths were determined by evaluating responses to eight general areas of information (as requested in the departmental survey), which included: (1) strength within unit or department; (2) emerging or existing strength; (3) research, scholarly activities, creative activities; (4) key individuals contributing to given strengths; (5) collaboration across departments/units; (6) unique/outstanding curriculum; (7) planning efforts – process and results; and (8) national benchmarking. Through the application of these criteria, nine strategic strengths (in alphabetical order) were identified.<sup>2</sup>

## 1. AGING AND CHRONIC DISEASE

Aging and Chronic Disease	
Focus Areas	Departments
<ul style="list-style-type: none"> <li>▪ UB-Toshiba Stroke Research Center / UBNDCC</li> <li>▪ Center for Excellence in Translational Cardiovascular Medicine</li> <li>▪ Center on Healthy Aging</li> <li>▪ The Neuroscience Center</li> <li>▪ Cognitive Science</li> <li>▪ Hearing and Deafness</li> <li>▪ Mechanisms of Neurodegenerative Diseases</li> <li>▪ CIMP Medical Imaging Physics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Communicative Disorders and Sciences</li> <li>▪ Geriatric Center of Excellence</li> <li>▪ Ophthalmology/Ross Eye Institute</li> <li>▪ Psychiatry</li> <li>▪ Social and Preventative Medicine</li> <li>▪ Communicative Disorders and Sciences</li> </ul>

Given the reality of an aging population, research into the diagnosis, treatment, and molecular mechanisms of chronic and degenerative diseases represents a significant opportunity for growth. A combination of clinical, basic research, and translational projects represents a true strength of this

<sup>2</sup> The NYS Center of Excellence in Bioinformatics and Life Sciences was identified as a tenth strategic strength. Its development has been occurring in parallel, but separate from, the subcommittees' deliberations.

area. A common theme – diagnosis, treatment, and underlying mechanisms of aging-related diseases – provides the unifying theme for this strategic strength.

The above identified centers represent a trans-disciplinary blending of the purely clinical, completely molecular, and psychological orientations. Within the existing centers collaborative interactions among center faculty are evident. Further, long-term grant support is generally strong and given the demographics of an aging population – both regionally and nationally – expansion of funding opportunities in the area of chronic aging and disease is anticipated.

## 2. ARTISTIC EXPRESSION AND PERFORMING ARTS

Artistic Expression and Performing Arts	
Focus Areas	Departments
<ul style="list-style-type: none"><li>Center for 21<sup>st</sup> Century Music</li><li>Center of Excellence in Visual and Literary Arts through Digital Technology</li></ul>	<ul style="list-style-type: none"><li>English</li><li>Music</li></ul>

The University at Buffalo has a long history of excellence in the creation, collection, maintenance, display, and performance of art, as well as in related scholarship including the critical study of artistic expression and performance. The Center for 21<sup>st</sup> Century Music reflects a distinguished history and traditional strength of the university. UB's Music Department has garnered an international reputation in the field of contemporary music creation and performance over the past 40 years. A measure of its standing is evident in the roster of distinguished composers whom have had short- and long-term residencies at UB as well as the performance premiers of notable compositions that have been presented over the years.

The proposed Center of Excellence in Visual and Literary Arts through Digital Technology – an emerging area of excellence – would apply developing digital technologies to preserve and expand access throughout the university to promote provocative scholarship and instruction, to open collections to a broader web-based audience, and to simulate the creation of cross-disciplinary courses and educational tools. This proposal is supported by a series of successful projects sponsored by the Poetry Collection, which demonstrated the potential of the digitalization of these collections.

### 3. BIODEFENSE AND RESPONSE TO CATASTROPHIC EVENTS

Biodefense and Response to Catastrophic Events	
Focus Areas	Departments
<ul style="list-style-type: none"><li>▪ Center for Biodefense, Bioinformatics and Emerging Infectious Diseases</li><li>▪ Center for Microbial Pathogenesis and Immunology</li><li>▪ Geographic Information Science</li><li>▪ Geohazard Studies</li><li>▪ MCEER, Enhancing Resilience Infrastructure Towards Extreme Events</li></ul>	<ul style="list-style-type: none"><li>▪ Civil, Structural, and Environmental Engineering</li><li>▪ Geography</li><li>▪ Geology</li><li>▪ Industrial Engineering</li><li>▪ Mechanical and Aerospace Engineering</li><li>▪ Microbiology and Immunology</li></ul>

In the current world climate, the development of effective research in biodefense and response to catastrophic events is critically important. UB's high-quality research programs and centers make this field a strategic strength for the university. Complementary foci groups (Center for Biodefense, Bioinformatics and Emerging Infectious Disease; and Center for Microbial Pathogenesis and Immunology) place the university at the forefront of studies related to biodefense initiatives. Additionally, strong 'foci' programs in Geographic Information Science, Geohazard Studies, and MCEER will contribute significantly to research related to catastrophic events.

Combining scholarly diversity around a common theme – biodefense and response to catastrophic events – offers a unique niche to UB (particularly given our strength in microbial pathogenesis, and earthquake analysis and management). A distinctive strength of this group is its potential to bring together groups which have not traditionally interacted with each other, thus affording the possibility that truly unique research programs might emerge. Further, each group represented under this area of strategic strength includes a robust base of faculty having well-funded research programs. In the near future, it appears certain that funding for homeland security-driven programs will increase, and those programs which offer the potential for a multi-faceted approach to biodefense and response to catastrophic events should be very competitive for extramural funding.

#### 4. CIVIC ENGAGEMENT AND PUBLIC POLICY

Civic Engagement and Public Policy	
Focus Areas	Departments
<ul style="list-style-type: none"><li>▪ The Baldy Center for Law and Social Policy</li><li>▪ Center for the Study of Law and Urban Justice</li><li>▪ Human Capital and Economic Development</li><li>▪ Center of Excellence in Technology, Culture, and Intellectual Property</li></ul>	<ul style="list-style-type: none"><li>▪ American Studies</li><li>▪ Geography</li><li>▪ Law</li></ul>

The social and cultural changes that have occurred over the past several years have led to a myriad of problems that confront local, national, and international constituencies. Problems associated with poverty, educational access and reform, housing, substance abuse, crime and criminal justice, health and environment, family violence, and persistent inequalities related to race, social class, and gender pose pressing societal challenges. As an urban public research university, UB possesses strengths across its various units including its ability to marshal collaborative expertise in research, teaching, and service that advances the public good.

The collective work conducted under the aegis of civic engagement and public policy draws on the existing strengths within the liberal arts and the professional schools. Moreover, a unique synergy has been established among these decanal units. Furthermore, the Baldy Center for Law and Social Policy has a large endowment, is nationally and internationally recognized for its distinguished record of scholarship in the area of law and policy, and provides critical support to other academic units across campus. The proposed Center for the Study of Law and Urban Justice draws upon the Department of Sociology's strength in socio-legal studies as well as its collaborative relationship with the UB Law School and the Baldy Center. This center would become a site for scholarly research and innovative teaching dedicated to understanding the social and legal problems experienced by diverse groups in the urban environment. The proposed center would also coordinate opportunities for students to participate in applied research focusing on urban problems in the Buffalo-Niagara region. The Human Capital and Economic Development proposal builds upon the Department of Economics' past research funding record and continued scholarship on human capital in promoting self-sustaining economic and social progress. Finally, the proposed Center of Excellence in Technology, Culture, and Intellectual Property draws on UB's strengths in the Schools of Informatics, Management, and Law to contribute to technology transfer efforts by providing clinical opportunities

for students involved with the university's technology transfer office as well as providing an important resource for UB's community in identifying new uses for, and development of, technology and ideas.

## 5. CLINICAL SCIENCES AND EXPERIMENTAL MEDICINE

Clinical Sciences and Experimental Medicine	
Focus Areas	Departments
<ul style="list-style-type: none"> <li>▪ Research in Oral Sciences</li> <li>▪ Pediatric Psychology</li> <li>▪ Child Health, Education, and Development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dental Medicine</li> <li>▪ Ophthalmology/Ross Eye Institute</li> <li>▪ Social and Preventative Medicine</li> </ul>

The proposed Consortium for Child Health, Education, and Development involves the health sciences units as well as the College of Arts and Sciences and the graduate schools of Education and Social Work. Major existing strengths include expertise in attention deficit/hyperactivity disorder and childhood obesity and both areas have an established record of research funding. Moreover, childhood obesity and ADHD are areas which have generated considerable public concern and substantial ongoing funding opportunities are quite likely. In addition to a research focus, there is demand for clinical services and teaching programs in these areas.

UB's School of Dental Medicine enjoys an international reputation for excellence in oral health research which involves interdisciplinary groups within the school as well as collaboration with faculty in the School of Medicine and Biomedical Sciences. These groups have an established history of external funding, ranking near the top ten NIDCR-funded dental schools in the US.

## 6. LITERARY, CULTURAL, AND TEXTUAL STUDIES

Literary, Cultural, and Textual Studies	
	Departments
	<ul style="list-style-type: none"><li>▪ Classics</li><li>▪ Comparative Literature</li><li>▪ English</li><li>▪ History</li><li>▪ Romance Languages and Literature</li></ul>

The humanities represent a critical dimension of a liberal arts education and proudly, UB has an established record of excellence in this area. The University at Buffalo has a distinguished faculty as well as unique programs and collections, which include the Poetics Program, the Electronic Poetry Center, and the Poetry and Rare Books Collection. Impressively, the Poetry and Rare Books Collection houses the largest James Joyce writing collection in the world.

## 7. INFORMATION AND COMPUTING TECHNOLOGY

Information and Computing Technology	
Focus Areas	Departments
<ul style="list-style-type: none"><li>▪ Trusted and Pervasive Computing, Information Assurance</li><li>▪ Computation, Simulation and Modeling (CCR)</li><li>▪ Center for Virtual Architecture</li><li>▪ Center for Document Analysis and Recognition</li></ul>	<ul style="list-style-type: none"><li>▪ Computer Science and Engineering</li><li>▪ Geography</li><li>▪ Industrial Engineering</li><li>▪ Mechanical and Aerospace Engineering</li></ul>

Recent advances in information, digital, and computing technologies have exerted a profound impact on almost all human endeavors, including discovery, creation, production, and exchange. As an aspiring premier public research university, it is imperative for UB to foster and encourage those initiatives that strive to best utilize these technologies for research, education, and outreach. Further, as a research university, we must contribute to the understanding of the full ramifications of these new technologies on individuals and society.

The proposed Focus of Excellence in Computation, Simulation, and Modeling will build upon computing infrastructure and staff expertise in the Center for Computational Research (CCR) and the Graduate Group in Advanced Scientific Computing to (1) facilitate and integrate faculty-led projects that rely in computer simulation and modeling; (2) increase research, scholarship, and funding to these areas; and (3) provide education, outreach, and training to the UB and Western New York communities. Excellent opportunities present themselves within this initiative as simulation and modeling are widely recognized as integral to 21<sup>st</sup> century science and engineering. Additionally, comparative advantages give it a further edge with the CCR being one of the leading supercomputing centers in the world.

## 8. MOLECULAR UNDERSTANDING OF BIOLOGICAL SYSTEMS

Molecular Understanding of Biological Systems	
Focus Areas	Departments
<ul style="list-style-type: none"> <li>▪ Center in Molecular Signaling</li> <li>▪ Buffalo Center for DNA Replication and Repair</li> <li>▪ Molecular Diversity</li> <li>▪ High-Field NMR Center</li> <li>▪ Developmental Genomics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Biochemistry</li> <li>▪ Chemistry</li> <li>▪ Dental Medicine</li> <li>▪ Physiology and Biophysics</li> </ul>

Knowledge of the molecular basis of biological processes is of central importance to the understanding and treatment of disease and the design of new therapeutic interventions. Very productive UB research programs contribute to this area of excellence.

Each group, as identified above, includes a strong base of faculty who have well-funded, interconnected, and interdepartmental research programs. The major strengths of the existing centers also include their inter-related member lists; their history of collaboration (evidenced by regular research meetings, joint publications, and extramural funding); and a considerable degree of overlap among their research interests. These connections offer strong possibilities for growth of the area overall, as well as the potential to diversify into newly emerging fields. Additionally, opportunities for collaborative funding of research and training among the interdisciplinary group members are excellent.



## 9. NANOMATERIALS

Nanomaterials	
<ul style="list-style-type: none"><li>▪ Center on Hybrid Nanomaterials for Multifunctional Structures and Devices (CoHN)</li><li>▪ Center for Spin Effects and Quantum Information in Nanostructures (CSEQuIN)</li><li>▪ Advanced Technologies for Biomedical Engineering</li><li>▪ Center in Photonics and Biophotonics</li></ul>	<ul style="list-style-type: none"><li>▪ Chemical and Biological Engineering</li><li>▪ Chemistry</li><li>▪ Electrical Engineering</li><li>▪ Physics</li></ul>

The development of more miniaturized equipment and storage devices has resulted in the recognition that new technologies are required for the design, synthesis, and fabrication of miniaturized systems. Consequently, the field of nanomaterials is having a tremendous impact on the new technological breakthroughs in material science, electronics and photonics, and their application to biological research, diagnostics, and medical devices. UB has major strengths in nanomaterials research groups and is well placed to be a major contributor to this field.

As an umbrella group, nanomaterials research will involve many decanal units of the university. Faculty from the College of Arts and Sciences and the schools of Medicine and Biomedical Sciences, Engineering and Applied Sciences, Pharmacy and Pharmaceutical Sciences, and Dental Medicine will contribute to these collaborative and interdisciplinary research efforts.

## 10. BIOINFORMATICS AND HEALTH SCIENCES

Bioinformatics and Health Sciences	
<ul style="list-style-type: none"><li>▪ NYS Center of Excellence in Bioinformatics and Life Sciences</li></ul>	<ul style="list-style-type: none"><li>▪ Biochemistry</li><li>▪ Chemical and Biological Engineering</li><li>▪ Chemistry</li><li>▪ Computer Science and Engineering</li><li>▪ Mechanical and Aerospace Engineering</li><li>▪ Microbiology and Immunology</li><li>▪ Oral Biology</li><li>▪ Philosophy</li><li>▪ Physiology and Biophysics</li></ul>

Five of the other strategic strengths – Aging and Chronic Diseases, Biodefense and Response to Catastrophic Events, Clinical Sciences and Experimental Medicine, Information and Computing Technology, Molecular Understanding of Biological Systems - will have a major role in research conducted in the NYS Center of Excellence in Bioinformatics and Life Sciences.

### *EXPANDING CAMPUS ENGAGEMENT*

Now that the UB community has identified its proposed strategic strengths, UB is inviting its faculty to comment upon them via a web-based forum and focus group discussions. Through open campus-wide meetings for each of the 10 strategic strengths, interested faculty will be involved in further defining and focusing the strategic strengths. Questions will include: Who will be our competitors? Where are our best funding opportunities (where applicable)? Do we have existing formidable competition or is this a unique niche? Understanding our potential competitors and best funding opportunities are critical in determining the efficacy of each strategic strength.

Following the faculty comment period, UB will conduct additional analyses, create vision statements, and develop an implementation plan for each strategic strength. Administrative and operational plans including governance structures, management systems, oversight functions, funding sources, and internal resources will be designed to ensure that each strategic strength operates efficiently and effectively.

## SECTION IV

### DEVELOPING A VISION FOR UNDERGRADUATE, GRADUATE, AND PROFESSIONAL EDUCATION

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When we speak of undergraduate, graduate, and professional education, we consider the range of academic departments and programs, teaching and learning, research and creative opportunities, faculty mentors, out-of-classroom intellectual and social activities, and so on. As we engage the campus in a discussion of academic excellence, we are also contemplating a vision for undergraduate, graduate, and professional education. Through the efforts of the Quality of Education Team (a subcommittee of the Academic Planning Committee), the development of guiding principles has begun to take form. These principles will help to shape the vision for undergraduate education.

#### A DISTINCTIVE UNDERGRADUATE EDUCATION

Because UB is such a large and comprehensive research university, it is difficult to capture a campus-wide view of the quality of UB's undergraduate education. The Quality of Education Team conducted such a review during the fall 2004 semester, with a keen interest in determining the quality and impact of the undergraduate and graduate educational experience.

Through a UB designed student survey, undergraduate students and graduate students had the opportunity to identify areas of academic excellence and academic areas in need of improvement across the university. Responding in significant numbers, both undergraduate and graduate students noted excellence in terms of our faculty, research, and academic advisement. Students further commented that UB should be lauded for its diverse student body, and developing and offering a wide-variety of academic programs and opportunities. As one might expect, our students identified campus IT facilities as being exemplary.

Of course, there are always areas in which we can improve. Our students noted the lack of a comprehensive university-wide calendar listing scholarly events and the desire to have smaller classes – perhaps signs of a burgeoning intellectual campus climate that needs to be nurtured.

Now that a preliminary analysis of the survey data has been completed, the University at Buffalo is anxious to contemplate undergraduate education further. To do this, we as a campus must consider

the responsibility that higher education has in cultivating the intellectual potential of our students so that they may graduate with the knowledge and skills necessary to contribute responsibly to our ever-evolving regional, national, and global communities.

Educational principles that resonate with higher education's responsibility for cultivating an enlightened, informed, and actively engaged citizenry are the foundation for developing a distinctive, meaningful, and intellectual undergraduate educational experience. Principles create the foundation from which one may conceptualize and subsequently advance an undergraduate experience that is noted for fostering knowledge, analytical skills, and habits of critical thinking and imagination that are essential for a satisfying and productive life. The principles, as proposed below, may provide the framework from which we may further develop a distinctive undergraduate education:

- Students shall acquire the depth of knowledge and essential skills in their majors to excel in their careers or to succeed in their post-baccalaureate educational pursuits;
- Students, through meaningful general education experiences and common curricular experiences, shall obtain broad understanding of the arts, humanities, and natural and social sciences so they have the capacity to solve problems through creative and critical thinking; express complex ideas through written and oral communication; and participate actively in their own personal growth through life-long learning;
- Students shall benefit from the uniqueness of the research university by partnering with faculty scholars/mentors engaged in advancing knowledge through scholarly activity;
- Students shall benefit from the expansion of cross-school and cross-disciplinary programs, which focus on differentiating strengths through the development of new signature interdisciplinary programs and tracks;
- Students shall develop technological proficiencies in their areas of specialization;
- Students shall understand the value of contributing to their communities through participating in experiential learning activities, such as volunteer activities, internships, and service learning;
- Students shall benefit from structured out-of-classroom programs and services that support individual and intellectual growth, and contribute to sound interpersonal relationships;

- Students shall acquire the knowledge and skills to be globally competent through study of other languages and cultures, extended cross-cultural experiences, education abroad programs, and learning in a vibrant campus culture that embraces social justice; and
- Students, benefiting from leadership development programming, shall serve as responsible citizens and leaders.

As a campus community, these principles will help us to shape the discussion regarding undergraduate education with the intent of forming a shared vision for undergraduate education. The Vice Provost and Dean of Undergraduate Education will have the responsibility for bringing together faculty, staff, and students from across the campus to lead this important discussion. Undoubtedly, this forthcoming vision will reinforce our strengths as a comprehensive research university that is noted, for example, for its innovative and multi-disciplinary academic programming, undergraduate research and creative opportunities, diverse extramural activities, and the benefits of learning with students from culturally, racially, politically, religiously, and ethnically diverse backgrounds.

## GRADUATE AND PROFESSIONAL EDUCATION

The quality of the academic enterprise can be measured, in a very significant part, by the intellectual rigor of graduate and professional education and the quality of the institution's post-baccalaureate students. When we begin to consider the ways in which graduate and professional education can be improved, we first must focus our attention on those distinct educational experiences - whether distinctly academic or extramural - that all graduate and professional students should experience.

With this objective in mind, in the next phase of the strategic planning process, the Vice Provost for Graduate Studies will bring together graduate faculty to contemplate and subsequently formulate a university-wide vision for graduate and professional education.

As this broader campus-wide dialogue commences, the following suggestions are offered as ways in which the overall excellence and reputation of UB's graduate and professional education can be enhanced in somewhat immediate terms: (1) graduate program review - strengthen the quality and national visibility of graduate, professional, and Ph.D. education university-wide through reestablishing graduate/professional program review; (2) graduate stipends - recruit the most talented and accomplished post-baccalaureate students through increasing the graduate stipend

level; (3) Ph.D. programs - reexamine the current configuration of masters and PhD programs and develop innovative Ph.D. programs; and (4) postdoctoral scholars - extend efforts to provide education and support for postdoctoral scholars.

## SECTION V

### ACADEMIC SUPPORT

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While UB's future growth and development will be guided by an academic plan based on clearly defined strategic strengths, we cannot ignore the very important physical and operational elements of our campus and their role in achieving academic excellence. UB must have an infrastructure that supports the creation and dissemination of knowledge, and one that uses the tools and technologies of the 21<sup>st</sup> century. To realize this objective, we initiated a series of activities designed to understand our present academic support environment and capabilities.

In the spring of 2004 each major department was asked to self-evaluate their support services and analyze the strengths, weaknesses, opportunities, and threats present in their respective areas. These "SWOT" analyses provided a foundation upon which we could engage a cross-functional and representative group to examine the comprehensive set of support services being provided across the campus. The Academic Support Planning Committee was convened in the summer of 2004 and began an exhaustive analysis. They sought to answer the following questions:

- (1) What services do we provide today?
- (2) How well do we provide those services?
- (3) What services should we provide in the future? and
- (4) Where do we have opportunities to improve the quality and effectiveness of today's services?

In the course of their analysis the Academic Support Planning Committee utilized various methods of engaging the campus community and collecting data. The committee conducted nearly two-dozen workshops, administered various questionnaires and surveys, and examined financial and other organizational data. This data provided a framework from which additional understanding could be gained about some specific aspects of our academic support operations. This discovery effort and subsequent analysis revealed the following:

- The campus is in need of several plans that can be used to guide the physical and operational maturity of our enterprise. For example, we now know that the campus would benefit greatly by having a long-term capital and facilities plan that aligns infrastructure additions and improvements to our academic plan.

- The campus could benefit from the creation of an “all-funds” budget and reporting system to streamline our current processes for managing our finances.
- Many of the projects that have been initiated to improve the quality and/or effectiveness of our services are in need of adequate resources and a strong leadership commitment to move them forward.
- The quality of life on the campus could be improved in quick and meaningful ways through a series of immediate initiatives. This finding was partially addressed through the recently concluded classroom blitz that occurred during the winter break in which dozens of classrooms were repaired or upgraded.
- There are opportunities to better support those employees who provide vital support services, to make their jobs easier, and to help them to be more effective.

Four major process areas emerged in which the potential opportunities for improvement seemed most immediately promising:

- Human Resources (HR)
- Information Technology (IT)
- Financial Services
- Facilities

In each of these areas opportunities to enhance the basic delivery of core services were uncovered. A detailed analysis and assessment of the existing service delivery model is warranted to better understand where opportunities for improvement might lie.

Considering the significant volume of effort that is required to adequately assess existing structures and processes, and the corresponding effort and resources required to develop new or enhanced models, the campus needs to consider a balanced approach in which it prioritizes and sequences the development of the aforementioned areas of opportunity. Factors giving rise to this analysis include:

1. The level of interest from the campus community to improve the area.
2. The strategic significance to the campus.
3. The complexity involved in transforming the area.



4. The time and resources required to transform the area.
5. The relative benefits to be gained by the campus by improving the area.
6. The degree to which the improvement will support the academic plan.
7. The relevance of the area to the development of future opportunities.

When considering all of these criteria and variables two of the four areas emerge as the leading candidates for further evaluation and possible redesign:

1. Human Resources (HR)
2. Information Technology (IT)

HR activities touch virtually everyone on the campus and were frequently cited through the Phase 1 discovery as an area in which enhanced services would provide the university and its employees both strategic and practical benefits. Having a sound HR organization and resulting processes and programs will increase performance levels, productivity, and morale. Attainment of the academic plan will require a high performing culture with a highly skilled and trained workforce. Fully realizing these objectives through existing HR structures and processes will be difficult. Additionally, as the campus prepares for and embraces further change initiatives, an effective HR organization that is equipped to lead the campus through varying degrees of change will be a strategic advantage to the campus. In addition, Phase 1 resulted in the discovery and initial identification of several specific opportunities within the HR area that are in need of improvement. Such areas include: (1) training and development plan; (2) manpower and salary plan; (3) performance management system; (4) timesheets; (5) pay stubs; and (6) direct deposits.

With respect to IT, the campus should leverage and embrace the technologies available to modern organizations of the 21<sup>st</sup> century. UB is fortunate to have a solid technology infrastructure and has opportunities to improve systems and applications to enhance the efficient delivery of processes and information across the campus. IT was also cited by many respondents in the Phase 1 discovery as an area where new tools would be of significant value to campus constituents. UB should have a clear vision of its technology so that it can strategically and wisely invest in the right systems that support the attainment of the academic and other strategic plans. Beyond the addition of new or enhanced technologies for the future, the campus will examine and analyze the exiting structures, methods and processes used to deliver IT services to campus technology users to ensure that those services are delivering high value to end users. Phase 1 resulted in the discovery and initial identification of several opportunities within the IT area that should be examined further and

developed. Such areas include: (1) classroom technology; (2) hardware and software configurations; (3) printing management; (4) A/V collection support and services; (5) servers and email; and (6) VoIP.

## **STRATEGIC TRANSFORMATIONS –OBJECTIVES, SCOPE AND APPROACH**

**HUMAN RESOURCES TRANSFORMATION.** The goal of the transformation is to equip UB with the means necessary to improve productivity, employee performance, and morale through the effective delivery of HR services. The transformation will consider and develop approaches in areas such as recruiting and hiring, compensation and classification, performance management, employee development and training, employee relations, labor relations, benefits administration and any and all other HR areas required to identify, evaluate, reward, and retain a high performing workforce.

A cross-functional project team comprised of HR employees and members of the larger campus community will lead the transformation. The team will map existing processes, evaluate best practices, and develop alternative approaches for improving the delivery of HR services and programs. Their work will engage broadly the campus and its varied invested constituencies. The team will create appropriate work plans, and identify milestones and deliverables in an agreed upon time frame.

**IT TRANSFORMATION PLANNING.** A successful university plans for its investment in technology, and effectively delivers technology and IT services to the members of the community. The IT Transformation Planning initiative has two equally important goals: the development of a short- and long-term plan for investing in technology, and the creation of a service delivery model that offers consistently high service levels to campus constituents. Ensuring effective, safe, and reliable access to information is fundamental in reaching the university's objective of enhancing the academic enterprise. Within the scope of this initiative will be all administrative and academic computing systems and processes currently in place, any potential systems that could enhance today's administrative and academic environments, and all people who deliver administrative and academic computing services and support. Excluded from the scope will be systems and efforts directly related to research computing or the support of specific research efforts. The IT Transformation will seek to understand campus and academic strategic goals and to align technology investments to better help achieve those goals.

A cross-functional project team comprised of IT employees and customers will lead the Transformation. The team will map and evaluate existing systems, explore alternatives, assess, and understand potential technologies required to support future strategic plans, evaluate best practices and develop alternative approaches for improving the delivery of IT services and programs. The team will create appropriate work plans, and identify milestones and deliverables in an agreed upon time frame.

**FINANCIAL TRANSFORMATION.** Phase 1 of the Academic Support Planning effort confirmed several areas within the delivery of financial services that are opportunities for further development. Opportunities exist to: (1) streamline and automate financial processes and systems; (2) create an all funds transaction processing and reporting system; (3) develop a new campus-wide budget planning and control process; and (4) advance current efforts in the areas of procurement processing, p-card utilization and strategic sourcing.

The financial transformation initiative will be appropriately sequenced to follow the HR and IT transformation initiatives. While financial transformation is of high strategic importance to the campus, allowing for the initial development of the HR and IT transformations will position the financial transformation for success. Certain elements of the financial transformation (i.e., budget planning and control and procurement processing) are already underway and will continue to be developed under the leadership of the appropriate line manager.

**FACILITIES TRANSFORMATION.** Phase 1 of the Academic Support Planning effort confirmed several areas within the delivery of facilities services that opportunities for further development. Opportunities exist in the areas of: (1) energy conservation and management; (2) maintenance planning and scheduling; and (3) capital allocation process.

The facilities transformation initiative will be appropriately sequenced to follow the HR and IT transformation initiatives. While facilities transformation is of high strategic importance to the campus, allowing for the initial development of the HR and IT transformations will position the facilities transformation for success. Certain elements of the facilities transformation (i.e., custodial services assessment) are already underway and will continue to be developed under the leadership of the appropriate manager.

## **MANAGEMENT INITIATIVES – OBJECTIVES, SCOPE AND APPROACH**

Beyond the strategic transformations identified above, there are a series of management initiatives that can be pursued, which will yield significant value and benefit to the university. Two such initiatives are: (1) the pre- and post-research award processes; and 2) Student Response Center and Integrated Student Systems.

**PRE- AND POST-AWARD PROCESSES.** The Phase 1 discovery process confirmed that there are opportunities to enhance the current processes, structures, and systems in place to deliver pre- and post- award services. This initiative will examine all current processes and structures, evaluate best practices, consider alternative models, and develop a set of recommendations for improving the quality and efficiency provided under the current model.

**STUDENT RESPONSE CENTER AND INTEGRATED STUDENT SYSTEMS.** The Phase 1 discovery process confirmed that the Student Response Center and multiple student systems are opportunities for further development and improvement. Students and faculty members frequently cited the Student Response Center as an area in which current processes and systems could be more aligned to and/or consistent with other high-performing student services. In addition, several indicators are present to warrant the further exploration of existing student systems to ensure that they are operated efficiently and delivering high quality. This initiative will examine all current processes, systems and structures, evaluate best practices, consider alternative models, and develop a set of recommendations for improving the quality and efficiency provided under the current model.

## CONCLUDING NOTE

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The purpose of this report is two-fold: 1) to communicate to the university community those identified strategic strengths that can be developed as to enhance significantly the reputation and academic prominence of the University at Buffalo; 2) to communicate the ways in which the physical and operational elements of our campus will assist UB in achieving academic excellence. While the final results of this strategic planning process will necessarily affect the university's budgetary, academic support, and facilities investments, it will not diminish the commitment to sustain the existing excellence of our research, scholarship, creative activities as well as our undergraduate, graduate, and professional programs.

As noted throughout this document, the discovery and analysis phase of the strategic planning process has provided us – as a campus – with more complete understandings of the university's academic strengths and the physical and operational workings. While it is necessary to design infrastructures to move suggested initiatives forward, there are some actions that emerged through the broader UB 2020 process which reflect our need to be proactive, progressive, and collaborative that we implemented to date. These include:

- **The creation of a bioinformatics governance infrastructure;**
- **The Center for Computational Research has been integrated within the NYS Center of Excellence in Bioinformatics and Life Sciences to support further the high-performance computing needs of the campus;**
- **The classroom blitz that occurred during the winter break in which dozens of classrooms were repaired or upgraded;**
- **The initiation of a plan to increase Teaching Assistant (TA) stipends;**
- **The establishment of a pre- and post-research award strategic planning initiative;**
- **The establishment of a Student Response Center review team;**
- **The creation and initiation of an annual budget process; and**
- **The creation and initiation of a capital and space plan.**

Together we have already proven that we have the desire and capacity to think strategically about our future. The task before us now is to begin acting strategically by aligning our actions and decisions to our emerging institutional priorities.

# APPENDIX 1

## STRATEGIC PLANNING PROCESS

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### ACADEMIC PLANNING: PROCESS

The University at Buffalo's academic planning process is designed to produce an academic plan that builds upon strategic strengths and institutional priorities as well as to develop the support elements necessary to operationalize the academic

plan. The figure at right provides an illustration of the academic planning organizational structure.

The Executive Committee is charged with developing and implementing the strategic planning process through providing oversight, coordination, and recommendations for the university's strategic initiatives. It also serves as an advisory council for the UB president and executive vice presidents.

Two primary planning committees assist the Executive Committee in executing their task: the Academic Planning Committee and the Academic Support Planning Committee. These committees oversee the two primary functional divisions of the campus.

**ACADEMIC PLANNING COMMITTEE.** The provost/executive vice president for academic affairs leads the efforts of the Academic Planning Committee. This committee is overseeing the coordination and integration of programmatic planning, including the development of the university's core strategic academic strengths. All investment decisions and academic support plans (capital, space management, resource allocation) will coalesce around the academic plan. Key elements of the academic plan will include the identification, development, and implementation of the university's true academic strengths.

Institutional Planning and Implementation



The principal objectives for the initial phase of the Academic Planning Committee's work include the following:

- Development of the process for identifying the true, emergent academic strengths of the university;
- Creation of the processes to engage campus leadership, faculty, and other stakeholders in the development of an academic plan that builds upon these emerging strengths; and
- Formation of a clear implementation strategy for the academic plan, including resources (capital, financial, physical, human), timelines, and mechanics for improved cross-unit academic collaboration.

In October of 2004, the Academic Planning Committee created four subcommittees to tackle key initiatives associated with the development of the foci of excellence (institutional strategic strengths) that will facilitate UB's goal of achieving academic excellence. Chaired by a member of the Academic Planning Committee, the subcommittees have been designed to allow expanded opportunities for faculty and students to contribute their suggestions on how to best move UB towards our institutional goal. The four subcommittees are as follows:

- **Foci Data Review Team.** Responsible for reviewing all new and existing foci of excellence summaries that have been previously submitted by the deans of the college and the twelve professional schools.
- **Departmental Strengths Team.** Responsible for identifying outstanding people, methods/approaches, and curricula.
- **Strength Indicators Team.** Responsible for creating a central repository for both internal and external academic metrics.
- **Quality of Education Team.** Responsible for gathering a campus-wide view of the totality of quality evident in undergraduate and graduate education.

The subcommittees solicited information and feedback from the entire faculty in the form of requesting proposals from across the campus on strengths within departments and units. Each subcommittee searched for our truly outstanding programs and/or activities. The subcommittees also sought to identify strengths that may currently be in their nascent state, but hold the promise of national recognition in the future.

The next phase of the process will focus on vetting the resulting strategic strengths to all students, faculty, and staff at UB and to further develop those strengths.

**ACADEMIC SUPPORT PLANNING COMMITTEE.** UB's interim executive vice president for finance and operations is leading the efforts of the Academic Support Planning Committee. It is charged with overseeing the identification, prioritization, development, and implementation of business and operational initiatives; the development of an all-funds campus budget process (developed jointly with the Academic Planning Committee); and the development of a long-term facility and capital planning process and plan.

This committee is developing an institution-wide academic support plan that is fully responsive to the university's emerging academic plan. An operational assessment will be used to prioritize opportunities for improvement, including gains in efficiency and improvement in services and service quality. The scope of inquiry for this group includes all campus service activities except for the delivery of instruction and research. The more specific objectives of this comprehensive operational assessment include:

- Assessment of current academic support services, operations, processes, and systems to identify significant gaps in current services and opportunities for efficiency gains and future academic support requirements;
- Development of an efficient process for collecting and analyzing campus-wide data;
- Evaluation of current costs for key academic support processes;
- Development of a prioritized set of opportunities with a business case justification and recommendation for the executive committee to consider;
- Development of a broad-based process that seeks input from a variety of constituents and stakeholders, and is collaborative and transparent; and
- Development of an estimation of the resources and timelines required to design new solutions and new models.

The initial assessment includes the prioritization of opportunities and high-level academic and business rationales supporting the committee's recommendation. These opportunities will be analyzed and refined after the Academic Support Planning Committee and the Executive Committee review them. The timeline for the second phase analysis will be based on the number of



opportunities requiring detailed analysis.

The Academic Support Planning Committee commissioned four subcommittees to assess the current academic support infrastructure, including its operations, processes, and systems, and to improve the quality and/or efficiency of our current support services. The four subcommittees are:

- **Service Mapping Team.** Responsible for identifying and assessing all campus support services.
- **Cost and Revenue Decomposition Team.** Responsible for identifying and analyzing all campus cost and revenue structures.
- **Metrics and Benchmarking Team.** Responsible for collecting information about internal measurements and analyzing benchmark data from peer institutions.
- **Workshops and Interviews Team.** Responsible for gathering suggestions for areas in which the university's support systems and infrastructure can be improved.

These assessment efforts have been augmented through work conducted in the following task-force groups:

- **The Government, University, and Industry Task Force.** This task force was charged with creating a comprehensive, coordinated plan that will allow UB to maximize its relationships with state, federal, and international governments and with private and public industry ([see Appendix 2](#)).
- **The Bioinformatics Business Planning Task Force.** The Bioinformatics Business Planning Task Force was charged with the creation of a comprehensive plan for the New York State Center of Excellence in Bioinformatics and Life Sciences at the University at Buffalo following the significant expansion and restructuring of the center in April 2004. The task force examined the development of the New York State Center of Excellence in Bioinformatics and Life Sciences within the university's larger framework. The task force was comprised of four sub-teams, with members drawn from the internal and external UB community, including local business and community leaders. The four teams included program and strategy, finance and operations, organization and governance, and commercialization and bio-economy. The teams were designed to build a sustainable plan for the New York State Center of Excellence in Bioinformatics and Life Sciences with the goal of building a broader life sciences community in

Western New York. Their reports are scheduled to be completed by beginning of the Spring 2005 semester and will be provided to the executive committee for review and comment ([see Appendix 3](#)).

- **The Community Engagement Task Force.** This task force, which has just completed its initial work, was charged with the creation of a comprehensive and integrated plan that will allow the university to improve relations with the communities it serves. The Community Engagement Task Force was constituted to address, understand, and identify the university's opportunities for effective, strong, and mutually beneficial engagement with its surrounding communities. The task force spent a considerable amount of time interviewing people in the local community, including business leaders, community leaders, elected officials, and homeowners who reside near UB's two campuses. The task force identified a number of exciting opportunities for UB to expand its community engagement efforts and presented a preliminary set of recommendations to the Executive Committee in October. The Community Engagement Task Force has been asked to develop its final recommendations, which will include a path for implementing the recommendations and a plan for communicating its findings, both internal and external, to the university ([see Appendix 4](#)).

## APPENDIX 2

### GOVERNMENT, UNIVERSITY, AND INDUSTRY TASK FORCE

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#### **GOVERNMENT, UNIVERSITY, AND INDUSTRY TASK FORCE: FINDINGS**

In summer 2004, the Government, University, and Industry Task Force was charged with creating a comprehensive, coordinated, and integrated plan that will allow UB to realize its government and industry objectives. This plan also includes a campus-wide strategy for integrating all government and industry programs along with supporting processes and organizational structures required for the plan's success.

**STRATEGIC ISSUES.** To achieve the University at Buffalo's institutional goal – to be one of the nation's premier public research universities – the university will need to increasingly leverage industry and government opportunities. When appropriate joint initiatives among industry, government, and university are realized, the University at Buffalo could witness a growth in research funding and regional economic development.

UB 2020 provides a unique opportunity for UB's legislative agenda to be informed by an overarching campus strategy. With such a strategy, UB will be able to proactively drive its legislative agenda; implement funded programs; quickly respond to opportunities; and provide funding aligned to campus goals. Further, with a meaningful strategy for developing corporate partners, there would be direct benefits to students (test-bed for academic ideas, curriculum development, future employment opportunities); increases in philanthropic opportunities; synergy for government opportunities (increased competitiveness for federal grant acquisition, increased state earmark funding); and increases in patent/licensing, venture capital, and number of start-up companies.

Organizationally, it is important for the campus to nurture opportunities for building stronger industry and government relationships beyond our unit-level successes. Coordinating all of UB's industry and government efforts will further strengthen the university's position in the government and industry arenas.

## **GOVERNMENT, UNIVERSITY, AND INDUSTRY TASK FORCE: RECOMMENDATIONS**

The task force recommends the following design principles as the framework for an effective government and industry strategic model:

- Closely link government and industry strategies (and efforts) with the university's academic plan;
- Coordination of government and industry strategies and efforts are essential;
- Effective incentives and rewards will advance campus government and industry objectives;
- University-level government and industry strategies can exist in tandem with individual relationships; and
- A shared and searchable database will provide important support for government and industry efforts.

The proposed government and industry strategic model - grounded in the above principles - would provide coordination (including communications strategy), oversight, and accountability for the development and execution of government and industry plans. The new model also would provide for the coordination of government and industry objectives within the broader context of the university's academic plan.

From a strictly legislative planning perspective, the proposed model will provide the necessary vehicle in which the university's legislative agenda can be considered, developed, and ultimately aligned with the university's academic plan.

## **NEXT STEPS**

The task force has developed a systematized, cyclical process for legislative recommendations. Once recommendations are collected (from the deans and vice presidents), distributed, and

debated, legislative priorities will be aligned with the resultant academic plan. This will ensure that our academic priorities are given every opportunity (where appropriate) to be supported by state and/or federal funding.

Further, a UB legislative calendar has been created which aligns with state and federal government calendars. Synchronizing UB, state, and federal government calendars will allow UB to be more strategic in legislative efforts, providing us with the opportunity to further influence state and federal government officials regarding our institutional legislative priorities.

Turning to industry initiatives, UB is operating in an environment that does not have a coordinated system to leverage industry efforts. Industry relationships are evident on campus, but for the most part, through individually-based relationships and not through institutionally-based relationships. A proposed President's Industry Council has the benefit of bringing together CEOs from across the region and country to develop institutional relationships with UB.

Once the formalized university-wide strategic planning process comes to a close, it will be important that government and industry strategic initiatives are led, managed, and coordinated with a view to internal campus priorities and the agendas of external stakeholders. To lead and manage these priorities, the campus is poised to establish a new Office of the Executive Vice President for External Affairs. The Executive Vice President for External Affairs will be responsible for four principal areas: government affairs; community engagement; development and alumni; and communication and marketing.

## APPENDIX 3

### BIOINFORMATICS BUSINESS PLANNING TASK FORCE

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#### INTRODUCTION

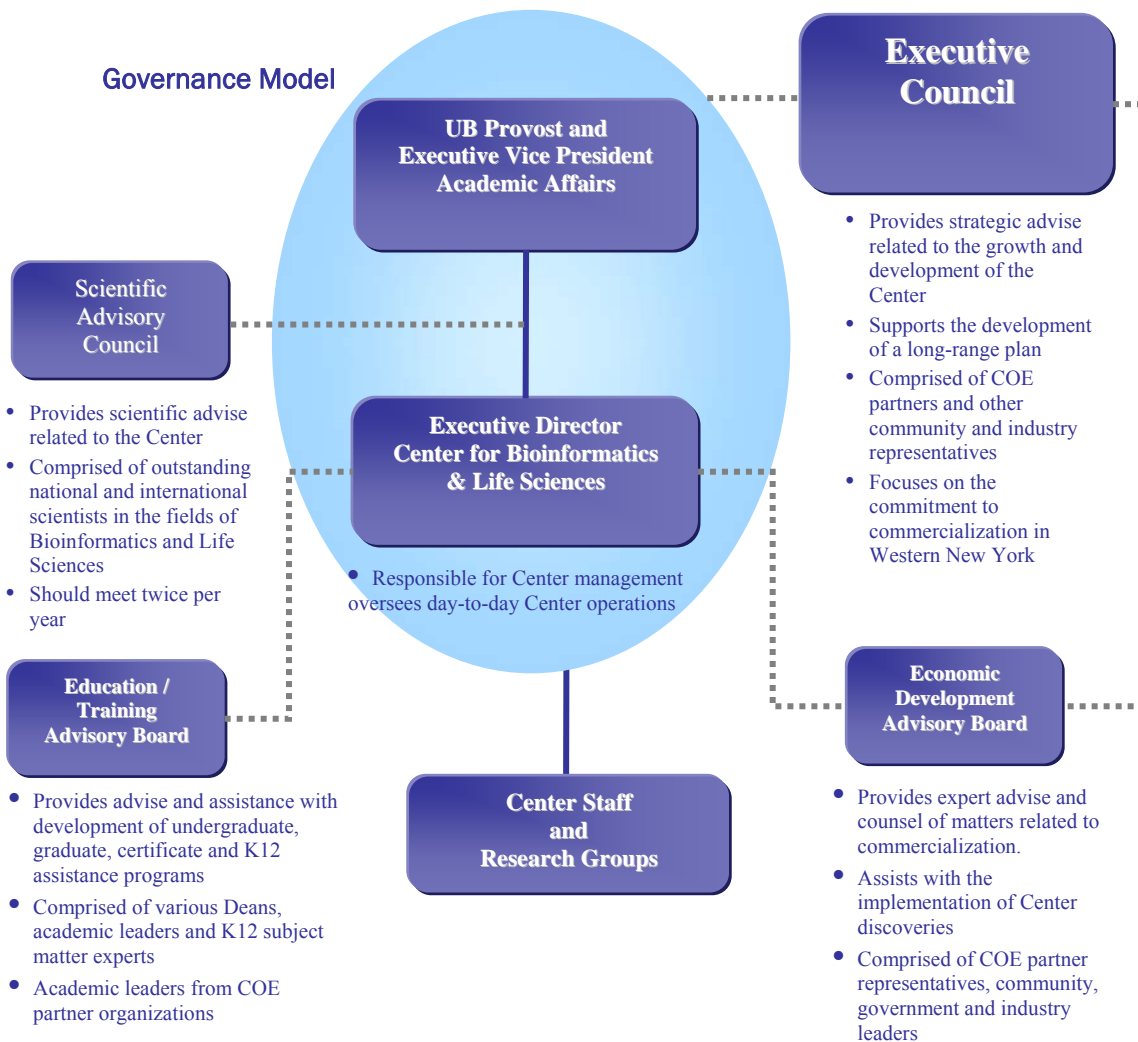
The Bioinformatics Task Force was charged with the creation of a comprehensive plan for the New York State Center of Excellence in Bioinformatics and Life Sciences at the University at Buffalo, following the significant expansion and restructuring of the Center in April 2004. The Bioinformatics Task Force examined the development and implementation of the New York State Center of Excellence in Bioinformatics and Life Sciences within the university's larger framework.

The task force was comprised of four sub-teams, with members drawn from the internal and external UB community, including local business and community leaders. The four teams included: organization and governance; finance and operations; program and strategy; and commercialization and bio-economy. The teams were designed to build a sustainable plan for the New York State Center of Excellence in Bioinformatics and Life Sciences and are committed to the goal of building a broader life sciences community in Western New York.

#### BIOINFORMATICS BUSINESS PLANNING TASK FORCE: OUTCOMES

**ORGANIZATION AND GOVERNANCE.** The governance structure of the New York State Center of Excellence in Bioinformatics and Life Sciences at the University at Buffalo is best illustrated in the figure below. The Executive Council initially will be constituted as a panel comprised of Center of Excellence (COE) partners and other community and industry representatives. The Council will be charged with providing strategic advice related to the growth and development of the Center, and will work to support the development and execution of a comprehensive long-range business plan for the Center's operation. The UB Provost and the Executive Director of the Center of Excellence will receive counsel from the Executive Council, and its responsibility will be advisory in nature. Additionally, the Council will receive guidance from federal and state officials in acknowledgement of their influence on the Center's funding and mission implementation.

The Scientific Advisory Board will consist of outstanding national and international scientists in the fields of bioinformatics and life sciences. The Scientific Advisory Board will meet biannually with the senior scientific leadership of the Center to review programs, progress and scientific strategy. The Education and Training Advisory Board will consist of individuals in the region with academic,



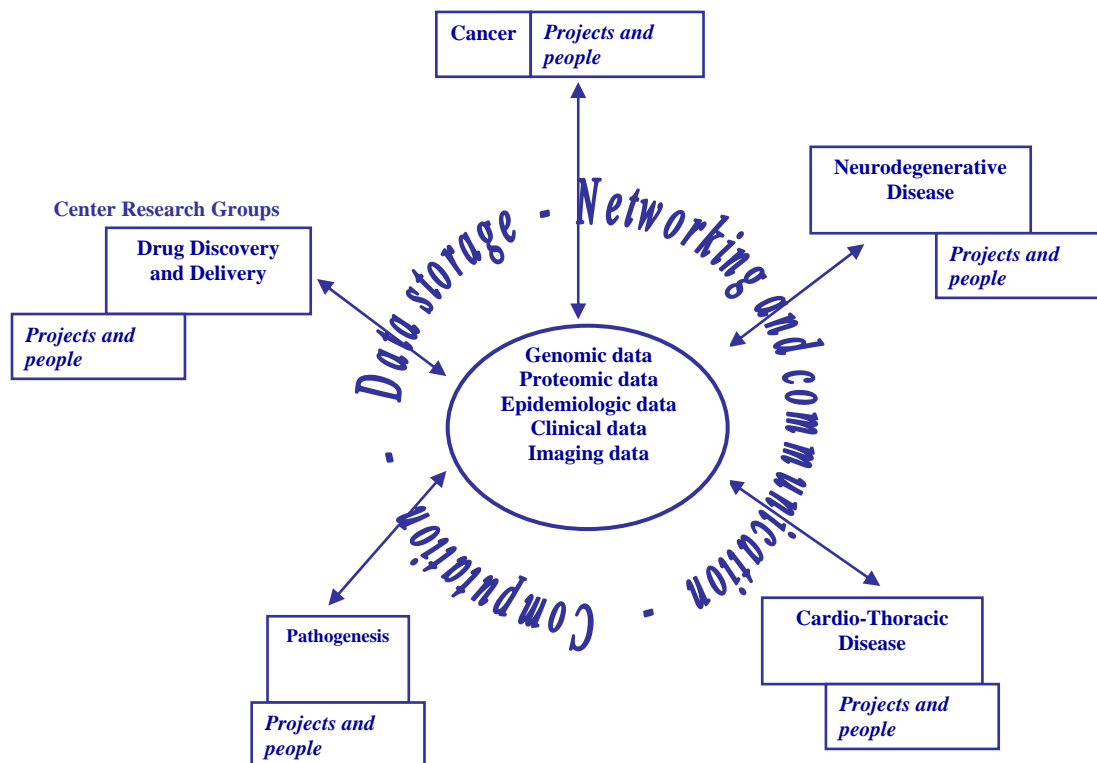
educational, and workforce development responsibilities. This group will provide advice and assistance with development of undergraduate, graduate, certificate and K-12 programs, and will be comprised of cognizant UB deans, academic leaders from UB and partner organizations, and specific subject matter experts in the area.

The Economic Development Advisory Board will provide expert advice and counsel on matters related to commercialization. This advisory board will assist with the implementation of Center discoveries and will be comprised of COE partner representatives, community, government, and industry leaders.

**FINANCE AND OPERATIONS.** An Executive Director will be responsible for the management of the Center and all of the Center's day-to-day activities, scientists, and staff. The Executive Director will report to the Provost/Executive Vice President for Academic Affairs of the University at Buffalo. A Chief Operations Officer for the Center will have fiduciary management responsibilities and oversee staff and facilities operations. The Operations Officer will also be charged with assisting the Executive Director with other Center administrative activities, including report writing, grant writing, and personnel administration. The Operations Officer will be assigned to and funded by the Center.

**PROGRAM AND STRATEGY.** The New York State Center of Excellence in Bioinformatics & Life Sciences will distinguish itself from the myriad of other programs that now exist throughout the world. The opportunity for this distinguished presence in the field of bioinformatics will require a broad vision to capture our existing strengths in the areas of basic research and science, public health and translational biomedical sciences, and our potential strength in discovery and commercialization.

To accomplish this goal, the Center will be comprised of inter-related specialty laboratories that can function alone and in sequence to facilitate the process of disease mechanism and therapy.





As proposed, the following research groups include:

- **Data Intensive Analytical Bioinformatics Core Group:** This unit within the Center will act as a fundamental technology resource for Center members and the collaborating scientific community.
- **Drug Discovery & Delivery Group:** This unit within the Center will develop biologically relevant compounds and delivery systems that can be linked to effects on specific gene expression patterns that create new drug targets. Nanomedicine approaches are also pursued by this group, particularly related to cardiovascular disease and cancer.
- **Cancer Biology Group:** This unit within the Center will identify targets to inhibit tumor growth and cell proliferation. The unit will focus on tumor growth related to neurological cancer, melanoma and lung cancer, colon cancer, prostate cancer, and breast cancer.
- **Neurodegenerative Diseases Group:** This unit within the Center will investigate disease mechanisms of several neurological disorders, including Alzheimer's Disease, Multiple Sclerosis, Krabbe's Disease, Parkinson's Disease, and neurovascular diseases. In particular, this group will look at demyelination, neuroinflammatory processes, amyloid plaque formation and loss of cellular function. This unit will also coordinate molecular and genetic analysis with imaging informatics approaches as applied to neurological problems.
- **Cardio-Thoracic Disease Group:** This unit within the Center will identify mechanisms by which inflammatory processes associated with clinical events progress to acute and chronic disease. One arm of the group studies aspiration events that can progress to pneumonitis and ventilator associated pneumonias in order to develop treatments and diagnostics related to critical care lung diseases. A second arm of this group also studies sudden cardiac failure due to arrhythmias from a molecular and genetic approach. A third arm works translationally to develop risk profiles, identify genes and gene products useful to monitor progression and response to therapy, and to identify genes and gene products that are potential targets for intervention by genetic manipulation and/or drug or other intervention.

- **Pathogens & Biodefense Group:** This Unit within the Center will investigate virulence factors for bacteria and viruses important in human disease and in biowarfare. Novel vaccines, antimicrobials, and diagnostics will be developed based on structure-function understanding of these factors.

By combining the Center's research capabilities in information acquisition, storage, analysis, and presentation of informatics with the vast technological, industrial, economic and societal potential of high throughput biological sciences, bioinformatics will enable the development of state-of-the-art techniques for modeling and decoding of complex biological systems, leading to the identification of new medical treatments, efficient drug discovery and delivery techniques, improved therapeutics protocols, and fabrication of innovative medical devices and systems. Involved in these activities are approximately 100 scientists from UB, RPCI, HWI, Kaleida Health, Invitrogen Corporation, and GE Global Research. All current local Center scientists have substantial research grant portfolios. In addition to these individuals, we anticipate a requirement for hiring an additional 20 new principal investigators, both to expand existing areas of strength and to further develop vital new skills and technologies within the Center. Partnerships have been developed with Biogen, Hunter's Hope Foundation, Invitrogen Corporation, GE, and Oracle for the co-development of technologies and support for new faculty hiring.

Specific bioinformatics technology development and prototyping themes supported by the Center include:

- Therapeutic Lead Identification – Genomics, Proteomics, Molecular Genetics, and Disease Biology;
- Target Validation – In-vitro and In-vivo Disease Modeling for Target Validation;
- Therapy Design and Development – Structural Biology, Combinatorial Chemistry;
- Therapy Evaluation and Prototyping – Drug Scale-Up and Pre-Clinical Toxicology; and
- Clinical Studies and Implementation – Trait Analyses, Epidemiology, and Therapy Trials.

As noted above, these themes will be applied within the six primary organizational units of the Center to enable its mission.

**COMMERCIALIZATION AND BIO-ECONOMY.** Buffalo has traction in creating a life sciences economy as evidenced by the many new private sector jobs in the life sciences that have been created over the last two years. Strong linkages and collaborations have been forged among the major academic, research, government, and economic development entities, focusing on expanding the life science economy. Buffalo has an organizational base that can provide an integrated approach for cutting edge economic development, and education and training to support an emerging life science economy.

However, the definition of the bio-economy to be pursued in Western New York/Upstate New York is critical to the strategic approach that must be utilized by the Center of Excellence. Areas such as San Diego and Boston are firmly established and many other regions around the globe are pursuing bio-economies. In many of these cases the strategy is not defined and success is unlikely. The process of creating a *de novo* bio-economy is extremely difficult and highly complex. Conversely, initiatives that are adequately defined and capitalized (with both human and financial resources) can act as an economic driver with appropriate expectations. The bio-economy, by any definition, can provide an economic growth stimulus with expectations for a maximum of a few thousand direct “bio” jobs. It also can generate additional indirect jobs in the construction, shipping, insurance, financial, and retail sectors.

Bio-economy development will include both therapeutics and diagnostics, and by definition can include medical devices, translational and discovery-based services, biosciences program management services, and pharmaceutical manufacturing. The successful approach will need to include expansion and recruitment of existing companies in addition to the development of new start-up companies. Biomanufacturing may be one of the major opportunities for the Western New York economy, including the production and sale of substrate devices and materials, as well as the actual product manufacturing itself. The Center of Excellence, with its New York State and Western New York community partners, will work with an appropriate national expert to define the best chronological development plan for the local bio-economy. The Center will then help to facilitate the implementation of this plan through its corporate and economic development partners.

The recent expansion and refining of the New York State Center of Excellence in Bioinformatics and Life Sciences will generate unprecedented economic opportunities for the Buffalo-Niagara Region and New York State, including:

- The creation of new start-up firms based on the Center's intellectual property with products including diagnostic tests, medical devices, software and ultimately – pharmaceuticals;
- The expansion of current companies in the life sciences industries;
- The attraction of existing companies into new locations in the Buffalo-Niagara region;
- The creation of new jobs in the life sciences at salaries above the Buffalo-Niagara regional mean;
- The increased private sector investment in the region; and
- The enhanced reputation of the Buffalo-Niagara region as a world leader in the life sciences.

## **NEXT STEPS**

The next step in this strategic planning process is to execute this comprehensive Bioinformatics strategic plan.

# APPENDIX 4

## COMMUNITY ENGAGEMENT TASK FORCE

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### UNIVERSITY AT BUFFALO COMMUNITY ENGAGEMENT TASK FORCE FINDINGS AND RECOMMENDATIONS

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#### BACKGROUND AND OVERVIEW

In the summer of 2004, President Simpson commissioned and charged a task force with creating a comprehensive, coordinated, and integrated plan to advance the University at Buffalo public service and community relations mission. The task force was comprised of UB public service, community relations, communications, and community service experts. The task force was charged with developing a campus-wide strategy for integrating all public service and community relations efforts and programs, as well as developing processes, organizational structures, and other support elements required to achieve the strategy. The task force met on a weekly basis and solicited input and opinions from a variety of internal and external subject matter experts.

Based on the charge, the task force engaged in a three-phase process. The first phase was designed to gain a collective perspective about the university's current public service, community service and community relations efforts and outputs and to assess both the benefits and challenges of the current effort. The second phase was designed to collect an objective perspective of the university's current contribution to the community and assess opportunities for improvement. The third phase was designed to use the outputs from the first two phases to develop a comprehensive community engagement plan and strategy for the future.

In the first phase members of the task force presented details of the public service and community service activities that exist within their areas of control. The task force also invited Deans and other subject matter experts from select areas to provide presentations on additional public or community service areas. The second phase involved one-on-one interviews with a variety of external community leaders and elected officials. Interviews were conducted over a six-week period. They were assessed for common themes and trends and used to inform the development of task force recommendations.

## COMMUNITY ENGAGEMENT TASK FORCE: FINDINGS

**Internal Assessment: Public Service.** The task force's internal assessment revealed many examples of extraordinary public and community service efforts at the University at Buffalo. (Note: For the purposes of their efforts, the task force defined Community Relations as "relationships with and within the community both locally and well beyond Western New York;" Public Service as "the application of scholarly expertise for the public good;" and Community Service as "sharing university assets and resources.")

The task force found that while robust public service is provided from many corners of the university - delivering significant economic and social benefit to the community - these public service activities are inadequately linked to broader university objectives and strategies. At a decanal level, those successful public service offerings have been effectively aligned to research and teaching objectives. However, the task force found that public service offerings are not being capitalized upon to support or strengthen broader community relations objectives.

**Internal Assessment: Community Relations.** While public service offerings were generally found to be quite effective, broader based community relations efforts were cited as lacking several critical elements. At an institutional-level, the task force found that defining community relations goals and objectives were not an institutional priority. As a result, the university lacks a clear focus of responsibility, strategy for community relations, and supporting structure for community relations (there is no organizational entity charged with fostering constructive community relations). This has led to inadequate integration and/or coordination of efforts and, lack of leveraging and/or capitalizing on public service offerings. Hence, while some academic units and departments are fostering good relations with the community, UB as an institution, is failing to be recognized for the breadth and depth of its social and economic contributions to the community.

**External Assessment: Role of a Public University in the Community.** To develop a broader understanding of the role of a public university in the community, the task force interviewed community leaders and elected officials asking for their perspectives on the role of a public university in the community. In an analysis of these interviews, eight themes emerged: to provide community leadership; to support economic development; to provide access to jobs; to strengthen the public service mission; to serve as partners with other community institutions and leaders; to educate young minds; to bring forth the best ideas in the community; and to serve as an impartial and neutral facilitator of community issues.

## COMMUNITY ENGAGEMENT TASK FORCE: RECOMMENDATIONS

Based on the above findings, the Community Engagement Task Force has presented a proposed Community Engagement Mission and supporting principles and strategies.

### Mission

To make a positive difference in our broader communities by applying our collective expertise for the public good, by sharing our leadership, creativity and capabilities, and by fostering a culture of community awareness and engagement in our students, faculty and staff.

### Supporting Principles and Strategies

- **To strengthen and sustain UB's impact as a public institution serving diverse communities here and abroad.** This may be accomplished by developing a unified university-wide public and community service plan; proactively seeking to understand the needs and interests of diverse communities; and through establishing a clear responsibility within UB for the collection, analysis, and measurement of public and community service efforts. Further, this goal may be achieved through designing organizations and processes that successfully coordinate public and community service efforts and information; creating opportunities and incentives to apply research and scholarship for the public good; committing sufficient financial and other resources to achieve public and community service goals; and developing an inventory for all internal activities and continuously assessing their impact in the community.
- **To build stronger community partnerships that enrich and enhance UB's teaching and research mission.** The strategies which will need to be employed for this goal to be realized include: creating meaningful structures, mechanisms, and ways for the community and UB to interact; developing a community partnership plan with targets, tasks, resources, responsibilities, timelines, and measures for success; and creating organizations and processes that successfully coordinate and manage key institutional partnerships. Further, the university should consider establishing and implementing focused and selected programs that have mutual benefit to the community and UB; and continuously evaluating the impact of existing partnerships

and identifying potential institutional partnerships including a focus on geographical locations.

- **To transform and promote UB's identity as a connected and committed member of its communities.** This goal may be accomplished through creating a focused and long-term awareness and image building campaign directed at both internal and external audiences; communicating widely (internally and externally) information about UB's public service, volunteer, and community relations activities and results; creating opportunities and forums for senior UB leaders to be visible in the community. And finally, it will be important to implement state-of-the-art tools and processes that continuously monitor, measure, and assess UB's identity and image in the community.
- **To cultivate a culture of community engagement in our students, staff, and faculty.** The task force recommended the following strategies be activated to achieve this goal, including: providing rewards, recognition, incentives, and institutional support for focused community engagement; fostering a sense of civic responsibility in our student population; and continuously promoting community engagement to faculty, students, and staff.
- **To be a good neighbor to the communities adjacent to UB campuses.** Through supporting the following strategies, this goal may be achieved. This includes: focusing appropriate UB service and research initiatives on geographical locations; developing campus priorities with sensitivity to area neighborhoods; opening the campus and programs to the surrounding communities; and involving local government and community engagement in exchanges regarding "town-gown" issues and opportunities. Moreover, the task force recommends educating students about residential rights and responsibilities, and increasing their awareness of personal safety; reducing disruptive off-campus student behaviors; enhancing communications among UB, permanent residents, and off-campus services; and encouraging faculty and staff neighborhood home ownership.

To enable these five principles and strategies, the task force proposed a new Community Engagement Unit. The proposed unit would be responsible, in part, for directly overseeing the



development and execution of community engagement goals and strategies as well as being directly responsible for coordinating the institutional community relations effort. The new Community Engagement Unit, in concert with Student Affairs, decanal units and other campus departments and units, as proposed, will deliver the execution of these strategies. The Community Engagement Unit should report to a newly created senior level External Affairs executive and be advised by a newly created Community Engagement Advisory Committee. The task force further recommends that the Community Engagement Unit be integrated with other key elements of the university that have responsibility for fostering external relationships including Government Relations, University Development and Communications. All of these units should serve under the umbrella of a newly crafted External Affairs organization led by a senior level executive reporting directly to the President of the University.

## TRANSITION TEAM

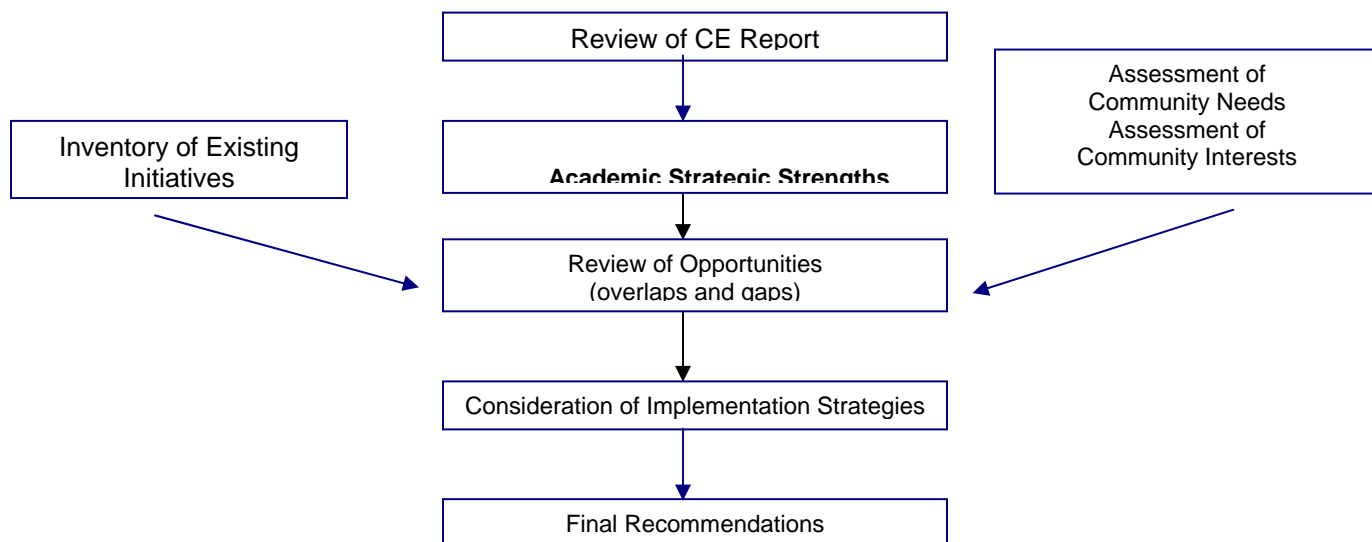
To sustain the further development and implementation of its recommendations, the task force recommended that a transition team be commissioned. Consistent with that recommendation, President Simpson charged a transition team in early December 2004 and requested that it develop appropriate role definitions and organizational structures to support the new Community Engagement Unit. The transition team was also charged with creating a process whereby the campus can assist in the identification and development of a few thematic areas in which to focus the community engagement plan. The thematic areas of focus should support the evolving academic plan and should incorporate the best thinking from both inside and outside the university. Finally, the transition team was charged with creating an effective on-going communication strategy and plan to share the details of the aforementioned findings and recommendations to both internal and external stakeholders.

**Community Engagement Unit.** The transition team has developed a preliminary outline of the key roles and responsibilities of the Community Engagement Unit. Consistent with the recommendations arrived at by the Government, University, Industry Task Force, the transition team concurs that Community Engagement should be one of four key functions within the newly established External Affairs organization, along with 1) Government Affairs, 2) Development and 3) Communications. The transition team also concurs with the Government, University, Industry Task Force view that an Executive Vice President of External Affairs reporting directly to the President of the University should lead this new organization. The Community Engagement Unit should be led by a senior level

executive and be responsible for overseeing the development of an annual community engagement plan; ensuring successful implementation of community objectives and initiatives; maintaining relationships with key community leaders and organizations; and keeping other external affairs leaders and the university's president abreast of community issues. The Community Engagement Unit should be organized around three major efforts; 1) community relations; 2) community based initiatives; and, 3) program integration and support.



**Developing Thematic Areas of Focus.** The transition team has developed a framework for engaging the campus in a series of discussions aimed at identifying a small number of thematic areas in which the university should concentrate as it builds upon and strengthens its community engagement effort. The framework is as follows:



**Communications Planning.** The transition team has created an initial communications plan. The initial plan is designed to share information about the findings, recommendations and next steps of the UB Community Engagement initiative and to collect feedback on the effort. The initial communications plan has three primary elements; 1) share information with external stakeholders who participated in the initiative through interviews or focus groups; 2) share information with campus stakeholders; and 3) share information with additional external members of the community who generally have an interest in the resulting effort. The first element – sharing information with external stakeholders – involved a formal presentation of the findings and recommendations with an appropriate opportunity for comment and feedback. The second element – sharing information with various internal stakeholders – occurred on the south and north campuses respectively with a formal presentation and discussion period. The final element – communication with other interested members of the community – involved a letter from President Simpson to numerous community stakeholders describing the process, outcomes and next steps. Communications will be an integral component of the Community Engagement Unit and a more detailed short and long term communications plan and strategy will need to be formulated.

**Community Engagement Unit Leadership.** Both the Community Engagement Task Force and the Transition Team strongly recommend that the newly proposed community engagement office be staffed immediately so that the various recommendations can be fully implemented. Having fully implemented recommendations will benefit the university in several significant ways and will support the principles and goals established by the task force and supported by the Executive Committee. Both the community and the university have expressed a mutual interest in accelerating the university's resolve to foster high quality relations within the community. The Community Engagement Unit is a necessary component that will support acceleration and is the fundamental ingredient underlying the strategies and plans that will form the foundation of the Community Engagement plan. Without an established and functioning organizational entity to lead the effort, the university runs the risk of maintaining the status quo in its relationships within the community and failing to meet its obligation as a public institution, and missing the opportunity to have a more positive impact on the world around it.