IMPLEMENTING UB 2020

Building a Great Research University: Partnership, Funding, and Flexibility

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Contents

Partnership for a Strong Future 2
UB 2020: The Requisites for Success 3
Funding and Implementing UB 2020 5
The Return on the UB 2020 Investment 14
Picture a time in the not-too-distant future when the Buffalo Niagara region is flourishing. Well-paying jobs abound. Native citizens have incentives to remain in the area to build their lives and careers. As in previous decades, opportunities here attract people from across the country and around the world. The population grows, property values increase, and the quality of life soars as Buffalo Niagara becomes a desired destination.

That image may seem remote given the economic challenges facing Western New York. But other regions – such as the Research Triangle in North Carolina and the Seattle, Washington area – have witnessed just such an economic renaissance because of the strength of their research universities. Only the status quo keeps us from doing the same.

And a regional knowledge economy, fueled by a robust local creative class, seems less farfetched if one considers how many critical building blocks already are in place. Take, for example, the University at Buffalo’s New York State Center of Excellence in Bioinformatics and Life Sciences, an institution built on the principles that guide the knowledge economy: innovation, collaboration, integration, and openness. Or UB’s School of Engineering and Applied Sciences that works to support the efforts of more than 175 companies each year, providing them with an edge against their competitors.

A robust partnership between UB, the State, and the region that allows UB to achieve its full potential as a premier public research university will yield enormous benefits for all three partners. Likewise, the cost of inaction would be almost unbearable: a region that continues its steady decline, missing out on projected bi-national population growth and becoming, in essence, a true Northern Appalachia.

With that reality foursquare in front of our regional, state, and national leaders, the focus must turn to the critical institutions capable of sparking such needed change.

The University at Buffalo stands ready to play this leadership role. We will do this by creating new knowledge and educational services through learning, research, and innovation by extending our intellectual talents to the region, state and nation; by inviting in our partners to explore the depths of the ideas and people in this scholarly community; and by linking up elements of the region to stimulate greater synergy and strength. These are the characteristics that distinguish a modern public research university in a knowledge economy.
This paper identifies the plans, costs, and strategies to fund UB’s transformation from its current status as a very good public university to one of the very best in the world. UB can do its part – the campus will raise more money, become more efficient, and invest its resources strategically. But this partnership also requires the joint efforts of the campus and state government to create the policies, the funding mechanisms, and the long-term commitment to build a truly great research university for New York State.

**UB 2020: THE REQUISITES FOR SUCCESS**

As the largest and most comprehensive campus in the SUNY system, the University at Buffalo educates over 27,000 students through more than 300 undergraduate, graduate, and professional degree programs.

Yet we do not even rank among the 75 largest schools in the country with similar breadth of programs. To achieve both the culture of academic excellence and the “bench strength” necessary to compete with the very top public research universities, UB is aggressively implementing UB 2020, the most ambitious transformational effort the campus has undertaken since UB joined the SUNY system in 1962. This plan, three years in the making and the result of a rigorous strategic assessment driven by the faculty of the university, has four major elements:

**Excelling in Academics.** By concentrating its energies in the areas of our greatest academic strengths (see below), UB has placed a premium on academic excellence. These efforts will allow the campus to realign resources, make strategic investments, develop partnerships, increase synergies across the campuses, and recruit top faculty.

**UB’s Strategic Strengths**

- Artistic Expression and Performing Arts
- Civic Engagement and Public Policy
- Cultural, Historical and Literary/Textual Studies
- Extreme Events: Mitigation and Response
- Health & Wellness Across the Lifespan
- Information and Computing Technology
- Integrated Nanostructured Systems
- Molecular Recognition in Biological Systems and Bioinformatics

**Achieving Growth.** In a drive to become one of the top research universities in the country, UB will implement plans to grow enrollments and the faculty and support base of the university by as much as 40 percent by 2020. Enrollment growth is a proxy for faculty growth and provides the engine to build an extraordinary depth and breadth of intellectual capacity at UB.
Building UB: The Comprehensive Physical Plan. For UB to become a model twenty-first-century university, it must have a physical presence that supports those goals and accommodates the expansion of the faculty and student base that is the essential ingredient of this plan.

Transforming Operations. UB is realigning operational services such as human resources, information technology, and sponsored programs for more efficient service and process delivery.

To be sure, UB 2020 is about UB. But while UB 2020 is attuned to the specific needs of the university community, it also seeks to position UB ahead of important national and international trends:

- The increasingly multidisciplinary nature of sponsored research;
- The imperative for universities to embrace innovation and collaboration; and
- Research, education, and service that are interconnected across local, national, and international boundaries.

UB’s growth will have significant impact for Buffalo Niagara, New York State, and beyond. But we must be clear: UB will need state policy changes and a considerable increase in revenue to succeed. This revenue will come, in part, from increased research funding, resources freed up through internal efficiency measures, greater philanthropic giving, and corporate partnerships. But success also requires additional state support, policy changes allowing for a predictable and differential tuition, and greater flexibility to finance capital expansion.

Faculty Strength and Quality Make a Great Research University

The pursuit of academic excellence at UB truly rests in the hands of the faculty. If UB is to fully realize the ambitions of UB 2020, the campus must be thoughtful and aggressive in building its faculty base. It is UB’s most crucial need to make approximately 1,000 high-quality new faculty hires adding to the current faculty base by 2020.

These faculty will make UB competitive for national centers of excellence, compete successfully for major multi-investigator grants, and build faculty scholarship levels in areas where sponsored research funds are typically scarce. Their research work will add hundreds of millions of dollars in additional federal funds that will flow into Western New York and bring greater academic recognition to the university.

This faculty growth also extends UB’s commitment to educate an increasing number of graduate and post-baccalaureate professional students. These new professionals taking their advanced degrees from UB’s world-class professional programs will be our state and region’s next generation of physicians and lawyers, business leaders, engineers, and health care specialists.

Faculty Thrive in Great Campus Environments

It is not enough simply to hire faculty to achieve the research expansion and scholarly prominence that UB seeks. These faculty require a truly dynamic and supportive campus environment and state-of-the-art infrastructures to create new knowledge, educate greater numbers of students, and devise the service programs that will have a transformative impact in the larger region and across the state. The critical elements of this support environment include the following:
• **Competitive Faculty Start-Up Support**

The faculty marketplace is competitive. The best young faculty and more mobile senior faculty in lab intensive disciplines can command expensive start-up packages. Therefore, having the requisite faculty start-up support will be critical for UB to be competitive in this marketplace.

• **High-Quality Graduate Students**

For the best faculty, a key element of the attractiveness of a campus environment is the quality of that university’s graduate students. It is also true that the best graduate students hope to work with the best faculty members while receiving the most attractive support packages a university can offer. Currently, UB graduate stipends are well below what is considered to be competitive. It is critical that graduate student stipend levels be raised to levels that can attract the very best U.S. and international graduate students to study at UB.

• **Dynamic Infrastructures**

Beyond space, exemplary faculty research requires leading-edge high-performance computing capabilities, transforming libraries to make available higher concentrations of digitized materials, and comprehensive pre- and post-award research administration services. The University at Buffalo will need to expand these infrastructures in response to a growing and more productive research faculty.

• **State-of-the-Art Facilities**

New faculty will require modern and efficient work facilities. In laboratory-intensive disciplines, faculty members will require state-of-the-art research facilities to house laboratory-based research teams of technicians, postdoctoral students, graduate students, and extra research faculty contributing to their research effort.

The following material suggests a comprehensive implementation strategy and funding plan to achieve the pillars of success that comprise the UB 2020 plan.

**WITHIN OUR COLLECTIVE REACH – Funding and Implementing UB 2020**

**The Two Phases of Implementation**

UB has devised a two-step implementation plan to achieve the full impact of UB 2020. The first step involves an extensive recalibration of the university’s faculty base support budget and the budgets that support the recruitment of high-quality graduate students and the support infrastructures of the institution. This recalibration will create the intellectual depth and the superior academic environments that are the hallmarks of a great research university. Consider the following:
• The student/faculty ratio at UB is much larger than our peer AAU public research universities. Recent studies indicate that UB would need to hire 253 additional faculty members to have in place a faculty size per number of students served that is in line with its public AAU counterparts.

• Graduate student stipends offered at UB across its Ph.D. program offerings are the lowest among all of the AAU public universities and are between $3,000 and $4,000 dollars lower than the AAU peer average stipend reported in a 2004/5 AAU Data Exchange (AAUDE) study. This gap has only widened in the years since the completion of that study.

• As indicated above, great faculty in great research universities thrive in great and supportive campus environments. The addition of 253 additional faculty would necessitate considerable investment in the support infrastructures of the institution.

With assurances that these base adjustments will occur, UB will launch, as step two, a sustained enrollment growth initiative serving up to 10,000 additional students based on the guarantee that policy and funding mechanisms exist in order to hire and support the faculty that are central to the success of this initiative.

The Cost Model

The university has constructed a detailed cost model that identifies the funding needs to implement these two phases of the UB 2020 plan. The model reflects the strategic thrust of this entire effort—that UB will attract more of the very best faculty to WNY and provide the great campus environment they need to build a great research university. The effort has been informed by consultation with deans to understand their faculty needs, their capacity for enrollment growth, and the mix of junior and senior faculty hiring they would seek if enrolling students at this maximum capacity level.
The model is informed by the different norms driving operating budget, capital budget, and faculty start-up costs in different academic units. When UB aggregates the calculations of the model at the institutional level, the following conclusions can be reached about how costs will accumulate as the campus implements its UB 2020 plan in each of these phases and in total:

- **Faculty Costs**

  The mix of hiring across disciplines and ranks of the faculty indicated in the model suggest that an average salary of $90,000 in 2007 dollars is an appropriate assumption to calculate the salary costs of the UB 2020 plan. UB expects to add just over 1,000 new faculty to its current faculty ranks across the two phases of the implementation plan, split in the following manner:

  - Recalibrating UB Base Support: $22.8M
  - Enrollment Growth Initiative: $67.5M
  - Total Faculty Cost: $90.3M

- **Graduate Student Costs**

  Superior graduate students are critical to the instructional mission of the campus and, even more importantly, to the academic environment of the university. The interaction of faculty and graduate students is at the heart of a vital research and graduate education enterprise operating at the core of great research universities. UB must offer a competitive support package to graduate students who serve as teaching assistants to recruit the best graduate students in the country. As the university
grows, the need to hire TAs at 40 students per TA FTE provides more opportunities to attract these superior graduate students. The 40:1 ratio is consistent with national norms for research universities with the array of undergraduate offerings found at UB.

Currently, UB’s average stipends offered to its TAs rank as the lowest among all public AAU universities in a recent survey. The UB 2020 plan would recalibrate the salaries to a competitive level of $15,000 from the current levels of about $11,000 during the first phase of implementation and then fund 200 additional TAs at this higher stipend level in the implementation of the UB 2020 enrollment growth initiative as indicated below:

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<tbody>
<tr>
<td>Recalibrating UB Base Support</td>
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<tr>
<td>Enrollment Growth Initiative</td>
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</tr>
<tr>
<td>Total TA Cost</td>
<td>$9.4M</td>
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- **Support Infrastructure Costs**

UB today spends $2 to fund support costs in total for every $1 of faculty salary it spends. It is a goal of UB 2020 to deliver academic support services more efficiently as time passes and to leverage existing investments and new technologies in an effective manner. For cost modeling purposes, UB expects to require only $1.40 per $1 of faculty salary spent in the future. The support costs of UB 2020 are split across the two phases in the following manner:

<table>
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<tr>
<td>Recalibrating UB Base Support</td>
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<tr>
<td>Enrollment Growth Initiative</td>
<td>$94.5M</td>
</tr>
<tr>
<td>Total Support Cost</td>
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</table>

- **Faculty Start-Up Costs**

UB expects, on average, to pay $225,000 in 2007 dollars per faculty member hired in start-up support. This average reflects the distribution of expected hiring by rank across the disciplines where start-up packages range from as low as $5-10K to as high as $3-10M. The one-time total start-up cost of the UB 2020 initiative is split across the two phases as follows:

<table>
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<tbody>
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<td>Recalibrating UB Base Support</td>
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<tr>
<td>Enrollment Growth Initiative</td>
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</tr>
<tr>
<td>Total Faculty Start-Up Cost</td>
<td>$225.6M</td>
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</table>
• **Capital Needs**

UB assumes in the model that current space utilization patterns by faculty and staff are appropriate for the future and that the current ratio of academic program space to academic support space is preserved for future capital need projections. The State University Construction Fund (SUCF) has confirmed that an appropriate average cost of construction in 2007 dollars for unit facilities is $400/gross square foot.

For residence halls, the campus assumes that 30% of its total enrolled student population would require a campus managed bed. Recent costs in building these facilities, escalated to 2007 dollars, suggest a model cost for residence halls of $330/gross square foot. The total capital cost of the UB2020 initiative is $1.4B, of which $326.7M is residence hall cost.

The sum total costs of the entire UB 2020 initiative total $226M in recurring operating funds, $225.6M in faculty start-up packages, and $1.4B in capital needs to build New York State’s great research university.
Financing UB 2020

The research, educational, and service mission of the modern research university is delivered through funds derived from a number of discrete sources. These sources include tuition and fee income paid by enrolling students, state taxpayer support for both operating needs and capital projects, revenues from auxiliary services and other fee-based service programs, research income, and donor funds. However, not all of these fund types can cover core operating costs of the university. Research and service income pay for the direct costs and specific infrastructures required for the delivery of those programs.

In general, universities cannot fund the essential operating costs of transformation initiatives with unrestricted philanthropic income. Donor funds generally supplement and leverage core budgets by supporting program enhancements specified by the donor such as scholarship programs, endowed chair funds, and high-profile facilities projects. Less than 5% of UB’s philanthropic income is classified as truly discretionary funding, and even these funds should be invested in high-profile ventures that excite the imaginations of donors so that they will give more in the future.

It is true that UB can take full advantage of all of these funding sources and grow them as the faculty base grows, but in ways appropriate to the purposes for which the campus receives those funds. The figure below indicates UB’s expectations about the use of its multiple fund sources as UB 2020 is implemented.
Tuition and State Tax Funding

It is indisputable that the large bulk of the operating costs of the UB 2020 plan will need to be funded by a combination of tuition income and state taxpayer support. It is also indisputable that in every instance over the last 25 years when tuition rates have been increased, the state appropriation allocated to UB in constant dollar terms has been reduced in equal or even greater amounts.

In New York State, the fervent political desire to keep tuition low and the equally fervent need to fund the rising costs of higher education from limited state taxpayer funds have resulted in highly unpredictable and disarming (for parents and students) spikes in tuition rates over time to compensate a suddenly urgent need to reduce state tax appropriations. Students and parents see a sharply increased price, but the reduction in state support has prevented university leadership from investing that price increase income to add value to the university’s degree programs.

The only way for UB, SUNY, and New York State to accomplish the full UB 2020 potential is to establish and preserve an appropriate balance of state tax contribution and tuition at levels required to support a great research university and maintain that funding balance over time. What the precise balance should be is a matter of public policy for the State that is best decided above the decision-making processes of this or any other campus.

But there is now an opportunity for State policymakers to determine how best to balance the priorities and needs of all citizens who have a stake in the future of UB and New York State in making this decision. The outcome is critical if the State is to capitalize on the full promise envisioned when New York State formed SUNY in 1948 and brought UB into its midst in 1962. And it will allow students, parents, and state taxpayers to have a significant and measurable impact on the quality of and access to a UB education.

An illustration of a possible approach might be the following:

- Consider the prospect of setting a differentiated, predictable tuition pricing system for UB and other SUNY research campuses. It costs more to fund a research university, many other state systems already differentiate research campus tuition rates, and it is clear from comparative studies that UB is underpricing its degree programs relative to its peer counterparts. A predictable pricing system allows parents to plan effectively for their children’s educational cost and allows the state to take measured steps to maintain the affordability of its public research universities by calibrating its financial aid programs to predictable tuition price increases over time.

- What tuition does not cover would become a matter for state taxpayer investment over time. It is not for UB to determine this balance between tuition and tax support, but the combination of these funding sources at the appropriate levels is critical for the success of the UB 2020 plan.

With these changes, the State of New York, together with SUNY and UB, will have in place a predictable and stable base funding model that removes the financial barriers from UB’s path to becoming a truly great research university.
Funding Capital Needs

There is both a policy component and a funding component involved in addressing UB’s capital needs. At the policy level, UB seeks what most AAU campuses have the authority to finance campus capital projects and have more flexibility to develop campus land with the aid of third party developers in keeping with sound business practice.

With this policy change, UB promises multiple benefits:

- UB can self-finance projects with guaranteed income streams in a nimble and business-smart fashion – residence halls, conference facilities, lodging facilities, incubator facilities, and recreational facilities.
- UB can utilize multiple income streams to match up to 20% of the total project costs for campus core academic and research facilities (e.g.; indirect cost recovery, gift income, banked tuition, and fee income).
- UB can leverage developer capital in creating income properties that also serve the short- and long-term capital needs of the university on and around its campus centers.

With the assumption that these policies will enable campuses to finance capital projects in the manners suggested above and, that approximately $50M will continue to be available each year through the SUCF to address critical infrastructure renewal issues as our campus ages, UB recommends the following financing strategy to address the programmatic capital facilities needs of the university:

- Core academic facilities – UB can match on an 80/20 basis at minimum (with a larger match in situations where philanthropic, governmental sources or other guaranteed sources have been secured). This suggested split means that UB would furnish and equip new facilities designed and constructed with bonded capital funds provided by NYS.
- Residence halls, dining facilities, conference facilities and apartments – UB would self-finance or developer finance 100% of total project costs.

Faculty Start-Up Funding – Maintaining a Competitive Stance

Since 2000, there has been no NYS or SUNY funding for faculty start-up needs. This fact, together with only incrementally growing operating budgets, has constrained faculty growth hiring at UB. UB has developed internal funding mechanisms – the use of position turnover savings, indirect cost recovery income and select philanthropic funds to fund the start-up costs for replacement hires. But, it will be necessary to create a more structured funding mechanism to fund the start-up need of the faculty growth envisioned in the UB 2020 implementation.

UB proposes a 50/50 match with NYS to cover the costs of these start-up packages. The campus will continue to fund all of the faculty replacement hires and 50% of the new faculty start-up costs if the system and NYS can create a funding program for the remaining 50% of this cost. UB will raise its match...
in several ways—management of faculty staff turnover savings, targeted corporate, governmental, and foundation solicitations, and federal and state equipment grant programs.

The Complete Funding Plan

As outlined above, UB requires an investment of $226M in operating support, $225.6M in start-up funds, and $1.4B in capital funds to achieve the full measure of the UB 2020 initiative. The graphic below indicates how the convergence of multiple and expanding funding sources, together with key policy changes, can bring UB 2020 within the collective reach of the UB/NYS partnership.
**The Return On the UB 2020 Investment**

The basis for the University at Buffalo’s economic power is the revenue that flows into the university. UB allocates these dollars to operate the university, pay wages and salaries to employees, build academic programming to draw students, and provide sports and cultural events to attract visitors. Faculty and staff, students, and visitors then pump new dollars into the economy, which circulate through related industries to leverage additional economic activity and an impressive total economic impact. The flow of impact is visualized in the figure below:

**The Difference a University Makes**

UB is seeking an additional $226M in recurring appropriation to fully implement UB 2020. This investment will bring 10,000 more students to Western New York, will result in the training of hundreds more advanced professionals in law, medicine, pharmacy, dentistry, physical therapy, nursing, and engineering, all training areas currently under great stress in this state and around the country because of critical workforce shortages in these professions.

We anticipate faculty and senior leaders of the institution will raise more than twice the research funds raised today, will raise four times the philanthropic dollars raised today, and will deliver services without price or for a fee in volumes well beyond levels the campus could begin to think about with today’s resource base. When the 2020 arrives, speaking conservatively because campus leaders believe that there is an extraordinary multiplying effect of this growth, the University at Buffalo will have added over $1.1B of annual recurring and growing economic benefit to WNY and NYS for the modest price of $225M in recurring funds.
As UB expands, its impact on factors that determine regional competitiveness in the knowledge-based economy can be expected to grow as well. With higher investments in research and development, UB increases its capacity to generate and commercialize new ideas. As part of its long-term facilities planning, UB will build a new incubator at its downtown Buffalo campus and double its research park in Amherst, thereby tripling the capacity of its incubator program. This program is a tangible expression of the impact of investment in UB to bring faculty to campus to conduct research that can be applied for commercial purpose and job creation in this region. More faculty, more students, and new business in expanded incubator facilities create and attract skilled workers and investment capital to WNY.

UB’s growth can also be expected to bolster its current impact on community features that attract and retain talented people. Additional faculty will strengthen UB’s presence in the region’s neighborhoods, and its investment in downtown Buffalo will add vitality to the region’s core. A more vibrant urban environment within an innovative, knowledge-based economy, at the center of which will be a larger, higher-profile UB, will project a stronger image of the region to the rest of the world.

The analysis, costs, and financing options presented here are the result of more than three years of relentless effort to develop a plan for building UB into a truly great university. Significantly, the crucial elements of the plan were devised, and are being implemented, by the faculty and staff at UB – a requisite for success – making UB 2020 unique to the needs of the university and the region in which we are embedded. As well the plan is both multidisciplinary and focused on producing knowledge and
impact that is highly socially relevant. Many universities have strategic plans, and most include faculty input. Yet it is unheard of in higher education for a plan to be so faculty-driven or so transformative in its intended effects.

Therefore UB 2020 is very much a plan for our university, our region, and our state. It flows from the particular strengths the university has developed over time, from the unique dynamics of our region, and from the needs of the people of New York. And it has the support of the local community. As such, UB 2020 is not simply a plan for the university, but is, perhaps, the single best bet for economic recovery in Western New York.

We are already living UB 2020 here at UB. Because of our internal efforts, dozens of new faculty hires are taking up positions within their strategic strength rather just a single department or school. Capital improvements are underway across the campus. And a culture of academic excellence pervades everything that we do.

But we are just beginning. A partnership between our university, our region, and our state will build something unique and extraordinary for the benefit of all New Yorkers. The sense of pride that derives from it will be the final proof that we have — together — created an institution of historic impact and enduring value.