



# STRATEGIC PLAN REVIEW

REPORT OF THE REVIEW COMMITTEE

August 2006

## Executive Summary

The Purdue University Board of Trustees approved Purdue's strategic plan -- *The Next Level: Preeminence* -- in November 2001 and, in 2005, extended its duration to 2007. As the first University-wide strategic plan at Purdue that created an umbrella under which unit-level strategic plans were developed and aligned, this plan set the keynote for strategic actions. Thus, with this plan, a new era ensued for Purdue with a common vision and concerted effort of all units toward the "next level."

This review of the plan was conducted by a Strategic Plan Review Committee appointed by President Martin C. Jischke in March 2006. The purpose of this review is to focus on the "big picture" providing both a retrospective view of the effectiveness of the plan, and a prospective view of the defining characteristics and supportive priorities to be considered for the next plan. This executive summary provides a capsulated view of the most salient aspects of the review of Purdue's strategic plan, and the recommendations to consider as Purdue looks to the future.

**It has been abundantly clear that the strategic plan has been remarkably successful in taking Purdue to the "next level."** Purdue has made very substantial progress with the strategic plan in reaching the goals of *Learning*, *Discovery*, and *Engagement* -- a refreshed progressive framework for the core purposes and commitments of a modern land-grant research university. More importantly, and perhaps of most long-lasting significance and impact, the plan along with the planning process have created a change in institutional culture -- a new pervasive culture of strategic thinking, planning, actions, assessment, and accountability. This new culture is marked by innovation, visionary initiatives, aggressive resource development, and widespread connectivity with Purdue's constituencies. The strategic plan has given the University new energy, a sense of excitement and accomplishment, and a sense of pride that have been reverberating throughout the University among its internal and external constituencies. Purdue's strategic plan vision -- *The Next Level: Preeminence* -- has been extraordinarily effective and exciting as the defining banner for the identity of the strategic plan.

**The hallmark of progress toward the goal of *Discovery* has been the creation of Purdue's Discovery Park, and increased research capacity.** Influx of new faculty, increase in endowed chairs, interdisciplinary research endeavors, visionary initiatives in signature areas, and rapid growth of research facilities, as well as research enterprise staff, have moved Purdue to the next level of research capacity, doubling the scope of sponsored programs and meeting the annual goal of \$250 million. With this demonstrated success, Purdue can now move beyond this level to take a global leadership position. With the expanded research infrastructure, growing faculty capacity, and a culture of interdisciplinary and collaborative endeavors, Purdue can now seek to double its research productivity yet again, and declare its preeminence in the global arena.

**The hallmark of progress toward the goal of *Learning* has been the addition of 300 net new tenure system faculty members.** With 249 already hired and the balance to be hired in another year, this infusion of new faculty and the normal replacements each year have been moving the academic environment to the next level, and transforming the academic culture of the University with new energy, new learning opportunities and programs, and new ideas,

innovations, and visionary initiatives. Faculty salary competitiveness has improved, but still lags behind Purdue's peers -- a concern with respect to faculty retention. National recognition of academic programs has increased as evidenced by program rankings. Student quality has continued to improve, as have retention, graduation, and career advancement/placement rates. Purdue remained accessible to academically eligible students with substantially increased availability of financial aid. With growing interest across the campus in expanding study-abroad programs, Purdue now needs to further enhance student learning in the global context -- global cultures, the global economy, and the global workplace.

**The hallmark of progress toward the goal of *Engagement* has been Purdue's active role in Indiana's economic development.** With a refocused and restructured engagement enterprise, Purdue has elevated its visibility and reputation in the state, and advanced its role and relevance to the next level as Indiana's land-grant research university with a new culture for engagement. Purdue's total economic impact in Indiana is now estimated at \$2.9 billion -- nine fold the state's annual investment in Purdue. Attested by the growth in technology commercialization, job creation through maturation of start-up companies, and national recognitions for serving as an economic development engine in the state, Purdue can now develop a robust program for translating intellectual property into commercialized ventures, and educating today's learners to become tomorrow's entrepreneurs in the global economy.

**The strategic plan has played a pivotal role in substantially growing Purdue's financial resources.** The goals for financial resources to implement the strategic plan have largely been met or exceeded. A growth of \$580 million in the annual operating budget -- from \$0.90 billion to \$1.48 billion over six years (or in excess of 64 percent) -- has been most remarkable at a time when higher education funds have been constrained nationwide. This is largely due to growth in tuition, sponsored programs, and the success in the ongoing \$1.5 billion capital campaign. In addition, Purdue has been aggressively reallocating existing funds to strategic priorities -- to the tune of about \$380 million by the end of the plan period -- demonstrating a culture of fiscal effectiveness and efficiency, and the ability and commitment to make choices. However, Purdue still is below its peers by nearly 22 percent in annual operating funds -- a gap that needs to be closed with aggressive funding strategies, primarily through increased sponsored programs.

**Unprecedented growth of physical facilities and infrastructure has resulted from the strategic plan initiatives.** With nearly \$464 million already invested in completed construction, Purdue will be investing a total of almost \$800 million in research and academic facilities and infrastructure when the construction plan is fully executed. This enormous growth, resulting largely from the success of the capital campaign, has created great excitement on campus. Repair and rehabilitation (R&R) of older facilities have, on the other hand, fallen behind due to lack of state funds for this purpose, and a special student fee has been initiated to supplement state support to gradually meet this need. There is some concern for the availability of sustainable resources to systematically address the R&R needs which will also involve the new facilities over time. Business process redesign and related information technology development have taken the high road with a massive \$73 million investment that will transform this enterprise in support of a data-driven culture that has resulted from the strategic plan.

**Campus diversity has markedly improved, but Purdue still has a long road ahead to become a “diverse” university as measured by minority representation in the national population.** Purdue has made considerable progress toward increasing faculty diversity -- with more than one-half of all new hires in the last three years made up of minorities and/or women (with each representing one-third of the hires). Student diversity continued to improve and nearly reached the overall minority representation of Indiana. While women representation on the staff has been very strong, minority representation has been very weak. Special initiatives are now in progress toward implementing best practices in training, leadership, outreach, and assessment with the goal of enhancing demographic representation and the diversity climate, and broadening business enterprise relationships across the state.

Where does Purdue go from here?

Purdue is assuming the mantle of a great university, joining the ranks of world-class academies. More importantly, the integrative view of *Discovery, Learning, and Engagement* reflecting a renewed land-grant mission as a research university has begun to successfully render Purdue’s preeminent characteristics in the global arena. This stature brings with it great responsibilities to address the major challenges confronting the world -- energy resources; environmental change; food, health, technology, and quality of life; economic growth and related societal issues and policies; and education of leaders who can significantly shape tomorrow’s world -- among others. This University now needs to provide leadership to the world in solving challenging problems in such areas -- to ascend to a new level of global action that not only anchors a vital role for the University in the future of the world, but also expands its partnership with Indiana, moving on to the global arena.

Purdue is well positioned to embark upon such new challenges -- to initiate, develop, and enable world-class programs and leaders to innovate solutions to such new challenges in the world. Success in formulating and executing its strategic plan has provided ample evidence that Purdue can both thoughtfully develop and then deliver on its promises.

This review strongly suggests that future strategic planning should position Purdue to boldly go beyond fulfilling the core commitments to the state, and further expand its reach nationally and toward a significant global presence, impact, and leadership -- with the range of great responsibilities that come with this stature. The following recommendations (excerpted from the full report) attempt to capture the defining characteristics and supportive priorities that address the “big picture” as Purdue looks to the future for renewed strategic planning.

#### Defining Characteristics

- Continuation of the core mission and goals -- *Discovery, Learning, and Engagement* -- as the foundation of a renewed strategic plan.
- A refreshed vision recognizing the progress made, and reflecting Purdue’s role as Indiana’s land-grant research university with core commitments in the state, along with a national/global reach and impact involving leadership in the educational environment in a changing world, evolving global economy and the workplace, and global partnerships.
- Reconfirmed or revised peer institutions consistent with a refreshed new vision.

- Advancing interdisciplinary and collaborative endeavors, and sponsored programs toward doubling the extramural funds, and expanding core research facilities.
- A dynamic and robust information resource base responsive to changing needs and roles (information technology, library resources).
- Learning innovations and assessment of student outcomes that ensure a superior education, and a broadened social/global understanding.
- Accelerated engagement in state economic development with focus on entrepreneurships.
- Aggressive pursuit of institutional diversity -- including demographic mix, culture, climate, and business and other external relations.
- Accelerated improvement of faculty and staff competitiveness -- compensation and recognition (e.g., National Academies).
- Continuation of investments in research infrastructure and signature initiatives.

#### Supportive Priorities

- Pursuing state appropriations for inflationary increases and program priorities of distinct value to the state.
- Proposing special tuition increases targeted to new strategic plan priorities that benefit students, with due regard to maintaining student access through financial aid, and with an eye toward curbing student indebtedness upon graduation.
- Expanding student aid to balance with Indiana's income demography, and nationally competitive students (based on need and merit).
- Increasing supportive resources -- supplies and equipment funds (S&E); support for leadership and expertise to engage in formalized and systematic student learning assessment.
- Developing criteria for considering contributions in engagement in faculty promotion and tenure.
- Developing a post-campaign plan, and a plan to prepare for a new campaign.
- Seeking alternative revenue sources and/or privatizing selected programs/services.
- Expanding support services such as childcare facilities/services.
- Reexamining scope of reallocations and priorities for programs and services.
- Continued development of learning facilities commensurate with enrollment and academic program needs.
- Developing a sustainability plan for the expanding physical plant (R&R).
- Promoting a model for systematic and pervasive attention to energy conservation.

In summary, Purdue's strategic plan -- *The Next Level: Preeminence* -- has been exceptionally effective in steering the University toward its vision, with a new culture for progress. The conclusion of the plan in another year will see more significant achievements. It also will have begun several visionary initiatives that will need to be nurtured to bring them to fruition and lasting impact. Thus, it will be important to stay the course with these initiatives and programs to deliver on the promise.

A new strategic plan with a refreshed vision will build on Purdue's strength and continuing progress, and render the University nationally as the model for a modern land-grant research university, and globally as the leading university of choice for collaborations and partnerships in discovery, learning, and engagement.

## 1. Introduction

The Purdue University 2001-2006 Strategic Plan -- *The Next Level: Preeminence* -- was developed with broad participation and ownership of Purdue's constituencies involving representatives of the faculty, staff, administration, students, alumni, and business and industry representatives. The Board of Trustees approved this plan in November 2001 and, in November 2005, extended the term of the plan to 2007. This extension was based on the projected time line for completing the strategic plan faculty hires, and mid-course corrections to the plan involving the need for modernizing administrative computing, accelerating the repair and rehabilitation of facilities, and the time line for an increased fundraising campaign goal.

President Martin C. Jischke appointed a Strategic Plan Review Committee ([Appendix-A](#)) in March 2006 to assist him in reviewing this strategic plan. The expectation of this review has been to provide a comprehensive sense of progress thus far, and areas that need to be addressed as Purdue looks to the future. Also as expected, the review is focused on the "big picture" providing both a retrospective and a prospective view. This includes an assessment of the levels of progress and accomplishments vis-à-vis resource investments made during the plan period, and identification of key opportunities, challenges, and issues of competitiveness as Purdue continues to move forward.

The Strategic Plan Review Committee has examined various reports and data trends ([Appendix-B](#)). These include the annual strategic planning progress reports presented to the Board of Trustees, cumulative reports on benchmarks and metrics, including specific information concerning the strategic plan goals of *Discovery, Learning, and Engagement*.

Further, a compilation of selected benchmarks and metrics in relation to resource investments, as a "dashboard" version of "return on investment" ([Appendix-C](#)), was reviewed for assessing progress on the major aspects of the plan. More detailed information also was examined concerning financials; student enrollment, retention, graduation, and placement; alumni characteristics; diversity; faculty activities; sponsored programs; physical facilities; interdisciplinary programs; advancement; and Purdue's economic impact on Indiana.

Additionally, the review committee conducted a survey of faculty, staff, students, and administrators soliciting input to this review process ([Appendix-D](#)). The populations surveyed included: 2,000 faculty and staff members (a random selection that also included all deans, directors, and department heads; Administrative and Professional Staff Advisory Council (APSAC) leadership; Clerical and Service Staff Advisory Council (CSSAC) leadership; a randomized selection of faculty stratified by college/school; 56 graduate student leaders (all); and 730 undergraduate student leaders (all). The information summarized from the survey was reviewed by the committee and utilized in conjunction with the other various reports and data in order to prepare this report.

The report of the review committee follows. It presents a comprehensive "big picture" view of Purdue's strategic plan progress to date, along with recommendations for areas that need to be addressed in future planning and actions.

## 2. Mission and Vision

### Mission

*The mission of Purdue University is to serve the citizens of Indiana, the United States, and the world through:*

***Discovery** that expands the realm of knowledge.*

***Learning** through dissemination and preservation of knowledge.*

***Engagement** through exchange of knowledge.*

### Vision

***The Next Level: Preeminence***

*Purdue will be a preeminent university, advancing quality in all areas while leading the world in the basic and applied sciences and engineering and improving society at home and abroad.*

**Purdue's mission has been well articulated in terms of *Discovery, Learning, and Engagement*, providing a progressive framework for the goals of the strategic plan.**

*Discovery* encompassing the breadth and depth of research, scholarship, and creative activity recognizes the role of all disciplines in expanding the realms of knowledge. *Learning* that translates teaching into learning outcomes broadens the scope of educational experiences for students. *Engagement* involving partnerships with constituencies expands the dimensions of Purdue's public purpose and value at home and abroad. As the foundation of the strategic plan, this mission has successfully served as the core purpose and commitment of Purdue as Indiana's land-grant research university.

**Purdue's vision, as captioned: *The Next Level: Preeminence*, has been remarkably effective and exciting as the defining banner for the identity of the strategic plan.** The vision statement, with its focus in the context of breadth, energized Purdue in effectively pursuing the defining goals with inspiration, motivation, and pride. The clarity of the standards for *Preeminence*, while perhaps a bit elusive, was perceived in relative terms by the stature and characteristics of the peer institutions. Reaching *The Next Level* became a pervasive motto as it signified not only a higher state but also a constant quest for improvement. Far and away, this drumbeat resonated effectively with both internal and external constituencies, and substantially enhanced Purdue's national and international visibility and profile.

The mission and vision have played a critical role in setting the keynote for Purdue that, as the defining context, explicitly and implicitly influenced the goals at the department and unit levels. As Purdue looks to the future, the mission and goal areas in the current strategic plan -- *Discovery, Learning, and Engagement* -- should continue to serve the University well as its base-line framework. The vision, however, should be refreshed with another ambitious banner that also acknowledges progress achieved through the previous strategic plan. A new vision should also accelerate Purdue's visible role in the rapidly changing world -- in education, in the global economy, in the global workplace, and in the global society and quality of life. Correspondingly, the cast of peer institutions should also be reexamined so as to reaffirm or revise the selected peers.

### 3. Strategic Plan Goals: *Discovery, Learning, Engagement*

**Consistent with the contemporary thinking on the purposes and commitments of a land-grant research university, the refreshed goal expressions -- *Discovery, Learning, and Engagement* -- gave Purdue the anchors for the strategic plan.** The review of various overarching aspects spreading across the three goal areas is described in Section-4. The following review of the goals is therefore focused on the most salient aspects that are specific to each goal (with occasional references to some overarching aspects).

#### a) Discovery

**The hallmark of this goal has been the creation of Purdue's Discovery Park.** As the visionary initiative to promote collaborative and interdisciplinary research, this initiative along with the growing research and other externally-funded initiatives throughout the University helped in achieving the \$250 million annual target for sponsored programs, doubling the starting base in 2000. Overall, Purdue reached a new level in its research enterprise and capacity.

The influx of new faculty (strategic plan hires as well as replacements) has been raising Purdue's capacity for research and competitiveness in emerging areas. Collaborative faculty hires through joint appointments and cluster hires have been advancing interdisciplinary research. Faculty participation in interdisciplinary research has grown by more than 50 percent to approximately 1,000 faculty members per year. This further contributes to the growth of interdisciplinary curricula, which in turn enriches academic program offerings in various disciplines and expands research opportunities for students.

A steady increase in endowed chair appointments has elevated Purdue's visibility and boosted research initiatives in signature areas both University-wide and within colleges/schools (e.g., advanced manufacturing, nanotechnology, information security). This has been a very critical strategy that needs to be pursued steadily so as to continually improve Purdue's competitiveness among the peer institutions. Memberships in the national academies signify the most coveted distinguishing characteristic for faculty competitiveness in research and national/international visibility. In this area, Purdue's progress has been mixed -- an appreciable increase in engineering, but a decrease in the sciences, from an already low number.

The number of research centers and institutes with sponsored funding has grown from 15 to 48, and growth in research facilities (Discovery Park, and other facilities across campus) has been aggressive. However, there continues to be a need to expand core research facilities, and further expand research computing resources. Initiatives with prospective impact of research and scholarship on the learning process are being nurtured, and faculty scholarship citations have increased by 11 percent to nearly 43,500 annually. Funding for graduate research assistants has increased, commensurate with the growth in research activity and the average stipend level remains competitive with the peers. Undergraduate research and scholarship opportunities have been expanded.

Although the research enterprise has expanded and discovery initiatives have intensified, Purdue remains well below the peer institutions in total funding for sponsored programs, and in research expenditures in sciences and engineering. After having doubled it once, Purdue again needs to nearly double its sponsored program funding to be able to reach the peer average level. And, this also will help in closing the nearly 20 percent gap with the peers in sciences and engineering expenditures. An assessment of research capacity has clarified that a potential for such growth exists at Purdue, particularly in view of the increase in faculty size resulting from the strategic plan hires. A multitude of new endeavors have been initiated, and Purdue needs to nurture them to fruition. Therefore, growing the research program further with aggressive initiatives must remain a heightened priority.

## b) Learning

**The hallmark of this goal has been the addition of 300 net new faculty members.**

This addition is on target with 249 hires completed out of the 250 authorized to date, and the completion of the remaining 50 is expected in another year. This is a new level of faculty capacity.

Increasing the faculty size has resulted in a student to faculty ratio of 14.7 to 1, which is better than the peer average ratio of 16 to 1. It also has increased the primary instructorship of faculty in upper division undergraduate classes from 85 percent to 89 percent. However, Purdue still lags behind the peers in this measure when all undergraduate classes (upper and lower division) are considered. Thus, there is more work to be done toward increasing faculty instructorship in undergraduate classes. This priority needs to, and is expected to, continue through the completion of the strategic plan faculty hires.

Consistent with the strategic plan priorities and investments for student retention, and graduation, these rates have been improving corresponding to improved student quality. During the most recent five-year intervals, one-year retention increased slightly from 84.8 percent to 85.1 percent, four-year graduation rate increased from 33.4 percent to 39.2 percent, and six-year graduation rate increased from 66.1 percent to 68.0 percent (nearly 70% when transfer graduations from other Purdue campuses are considered). These changes are considered significant due to Purdue's relatively large enrollment, and the consequently much longer time frame needed to see a marked increase in these rates.

While all of the most recent rates are below the peer institution averages, it should be noted that the peer institutions are considerably more selective than Purdue in admitting students. A more significant measure of competitiveness is a measure of actual versus predicted graduation rates (as reported in *US News and World Report*). By this comparison, Purdue's six-year graduation rate is now 7 percent above the predicted rate and is ranked fourth among the 12 in the peer group. Finally, career placement of graduates (employment or advanced study) has been more favorable compared to the peer institutions, increasing from 81 percent (1999-2000) to 91 percent (2003-2004), surpassing the peer average of 82 percent. The number of doctoral degrees granted

decreased to 446 when the peer average increased to 548. However, the average time to degree of doctoral students at Purdue remains at par with the peer average of 7.8 years. Although these are significant indicators, a campus-wide formalized and systematic assessment of student learning outcomes has been lacking. This should be urgently addressed, particularly in view of its importance as a part of the North Central Accreditation (NCA) criteria.

A University Honors Program, and a number of new degree programs in sciences and engineering have been added at both undergraduate and graduate levels. Program rankings have continued to climb further reinforcing Purdue's strengths in engineering, sciences, agriculture, management, and several other programs. As a result, Purdue is improving its competitiveness with its peers in top tier programs in the nation. The rankings vary from year to year since all programs are not ranked each year.

The learning enterprise has continued to improve as a direct result of the special tuition increase combined with other strategic plan investments. Instructional improvement programs and innovations in instructional methods have grown remarkably from 9 to 23 annually, with student participation doubling to nearly 4,000. Likewise, student participation in co-curricular activities, leadership development, and other learning opportunities also has grown by 50 percent or more during the last five years. Student participation in Learning Communities has expanded, so has participation in study abroad programs which has now reached around 1,000 students per year -- about 3 percent of the undergraduate enrollment. Closer attention needs to be given to learning in the national/global context, heightened by the rapidly changing global relationships and the global economy.

### c) Engagement

**The hallmark of this goal has been Purdue's role in state economic development.** A refocused and restructured engagement enterprise with a new strategic plan and approach toward addressing the needs of society has been playing a vital role for Purdue to serve as an engine for economic development in Indiana. In partnership with Purdue Research Park, the Cooperative Extension Program, college/school based programs, and other public and private organizations, Purdue has elevated its overall visibility and reputation in the state, and advanced its relevance as the state's land-grant research university with a new culture for engagement. Purdue's total economic impact in Indiana is now estimated at \$2.9 billion -- nine fold the annual state investment in appropriations.

The growth of licenses and patents, technology commercialization, start-up companies, Technical Assistance Program, and the Research Park have all contributed remarkably toward Indiana's economic growth and sustainability. The top national recognitions received by the Research Park bear the evidence of success of this entity as an asset for advancing economic development around the state.

Promotion, facilitation, and education of entrepreneurship continue to evolve at Purdue with emerging success. These activities need to be enhanced so as to develop a robust

program for translating intellectual property into commercialized ventures, and educating today's students to become tomorrow's successful entrepreneurs.

Alumni relations have been at an all time high at Purdue with substantial improvement in recent years, as revealed by a recent alumni survey. This and Purdue's very positive corporate relations have accelerated Purdue's success with the *Campaign for Purdue*, the unprecedented \$1.5 billion capital campaign which is ahead of schedule. In 85.7 percent of the time line, 93.1 percent of the goal or a sum of \$1.396 billion has been reached.

External relations have been successfully advanced by the President's community visits, interactions with business and industry leaders and state government leaders, as well as a wide variety of programs and events, marketing initiatives, news services, media, and various forms internal and external communications connecting Purdue to the state, and to national and international audiences. A major highlight of Purdue's engagement with the state's P-12 education programs has been the *Science Bound* program to nurture student interest in the sciences.

Service Learning activities have been recognized widely. Purdue's Engineering Projects In Community Service (EPICS) program has been recognized nationally. Other service learning programs are growing across the campus supported by a grants program. Purdue's distance education programs have been expanding. However, the offerings remain far below market opportunities, and internal capacity and potential.

Faculty participation in engagement increased from 370 FTE in 2001 to 420 FTE in 2005, signifying about 15 percent of faculty time devoted to this area. This clearly demonstrates a new level of engagement for Purdue. Attention should be given to considering faculty success in engagement toward promotion and tenure decisions.

## 4. Overarching Aspects

### a) Financial Resources

**The strategic plan has been the key to substantial increase in financial resources.** At the West Lafayette campus, Purdue increased its total operating budget (all funds) from \$0.90 billion in FY2001 (when the strategic plan was approved) to \$1.48 billion in FY2007 (current year). This remarkable growth of \$580 million represents an increase in excess of 64 percent during this period when, nationally, higher education funds have been constrained. This is largely due to growth in tuition revenue, sponsored program funding, and private fund raising. Each has been a result of deliberate planning -- tuition increases dedicated to the strategic plan, increased sponsored programs including enhanced interdisciplinary endeavors, and the \$1.5 billion *Campaign for Purdue*.

However, Purdue continues to trail behind the peers in budgetary competitiveness. Based on the latest available comparison (FY2005, IPEDS Finance Survey, excluding medical schools) for overall revenue, the peer average is ahead of Purdue by \$357 million or

nearly 22 percent. This difference is largely in the area of sponsored programs (\$275 million), and private/other funds. Also in 2005, Purdue's federally sponsored funds (\$141.5 million) ranked last at 45 percent below the peer average (\$258 million). This gap needs to be vigorously addressed, and the attraction of a major federally funded research laboratory can be instrumental to that end. Purdue's continuing success in private fund raising has begun to partially close the gap in this revenue stream. It is the sponsored programs area that Purdue needs to continue to grow aggressively, to double the current level, in order to close this gap.

The latest comparison also shows that Purdue's state appropriations are below the peer average while tuition revenues are above -- for a composite that is comparable with the peers. In other words, Purdue compensates for the lower state funding level by higher tuition revenue (enrollment size, and more nonresident students who pay their full cost of education). With the political climate not favoring high tuition increases, it is critical that the state increase its appropriations to Purdue in support of modest tuition increases, and to protect the University from falling behind the peers.

Funding from the state did not keep up with the expectations of the strategic plan due to the economy, and Purdue had to expand its internal reallocations to cover the gap. Even with the economy turning around, there is a growing concern as to whether the state will provide any significant additional funds to Purdue, or at least stay the course with the current funding level. Short of any new funds from the state, Purdue will need to secure alternative revenue sources, or make major adjustments to programs and services, as it looks to the future. Compromising on quality is clearly not an option.

Unprecedented reallocations have been made to support the strategic plan signifying financial agility, attention to strategic priorities, and a budgetary culture to change from "business as usual." Reallocation of an estimated \$380 million since FY2002 will be completed by FY2008 in connection with the strategic plan. The largest share of this reallocation (\$140 million) corresponds to new faculty start-up costs, a significant investment toward building research capacity. Another \$73 million is dedicated toward *OnePurdue*, a major strategic initiative to redevelop Purdue's business information technology infrastructure and capacity.

All this demonstrates unwavering commitment of the University toward judicious use of existing financial resources to complement the new financial investments. However, this aggressive trend of reallocations has begun to squeeze the flexibility of operating funds across University units, and there is a strong sense of concern emerging from the current tightness of the supplies and equipment (S&E) budgets. There also is a growing concern about the diminishing capacity for such significant reallocations in the future.

The allocation of all new and reallocated revenues each year was aligned with strategic plan goals as described in the annual budget documents. This allowed a longitudinal analysis of the resource investments vis-à-vis progress on the metrics. Overall, there is a strong sense that the investments have strategically addressed the goals and priorities with positive impact as measured through the metrics.

## b) Physical Facilities

### **Unprecedented growth of facilities has resulted from strategic plan initiatives.**

Purdue has an attractive campus and an impressive master plan. Physical facility and infrastructure development have been growing at a remarkable pace at Purdue. This has accelerated the development of research capacity involving interdisciplinary endeavors focused on visionary initiatives. Resulting from the continuing success of the capital campaign, new as well as renovated buildings have been (or will soon be) brought on line. When the facilities development plan is fully executed, Purdue is expected to invest nearly \$800 million in building facilities and infrastructure. While there is considerable excitement about the facilities growth on campus, there is also an emerging sense that Purdue should demonstrate its commitment to energy conservation in the design, construction, and use of facilities (e.g., “green buildings”).

With this unprecedented growth, Purdue has to deal with plant expansion costs associated with operating these new facilities. Since the state has not been able to provide these additional operating funds, these increased costs have been squeezing the scope of maintenance services provided to various facilities, and limiting the scope of annual investments in other academic priorities. Further, these new facilities will expand the repair and rehabilitation (R&R) needs in due course. Purdue has now implemented a special fee for students to supplement periodic state support and internal reallocations so as to systematically address the growing R&R needs. However, there is some concern for the continued availability of resources to sustain the new facilities in the future without jeopardizing other academic interests.

With widespread appreciation of the new facilities that have increased Purdue’s research capacity, there is a critical need to expand instructional space (classrooms and clinical spaces) and improve its quality. Further, accommodating the growing number of faculty in departmental homes has also been presenting challenges, since new facilities that are dedicated to interdisciplinary research endeavors are not expected to be occupied on a permanent basis by any group of faculty.

Purdue has been highly efficient in the utilization of instructional space. In comparison with the Big Ten universities, Purdue’s efficiency is marked by about 30 percent more in space utilization with about 30 percent less in space availability. All this is now pointing to the need for expanding classroom facilities along with informal learning spaces, and augmenting faculty office accommodations along with conference facilities. Further, in accordance with the changing demography of employees, as well as the needs of an increasing non-traditional student population, there has been a growing need to provide affordable childcare services.

## c) Information Resources

**The strategic plan has directed the critical evolution of information resources.** As a significant overarching aspect in the strategic plan, Purdue’s information resources provide backbone support to learning, discovery, and engagement. In addition to the annual allocations for strategic plan priority initiatives, reallocated resources to the tune

of \$73 million are being invested (as a mid-course correction to the plan) in modernizing the University's business information technology infrastructure and transforming business practices in unison with each other. This initiative will position Purdue to adopt and/or innovate with best practices. It is of utmost importance that Purdue create and maintain state-of-the-art information technologies, robust physical and virtual networks, a dynamic and secure environment that meets user needs, and a collaborative approach that harmonizes and expands central and decentralized services. Special attention needs to be given to advancing global communication, distance education, and increasing the capacity for collaborations and partnerships.

Purdue has a distributed Library system. It has not been widely clear as to whether the current system is the most responsive one to serve the needs and cultures of today's learners and researchers. The Libraries have recently renewed its strategic plan, and several analyses now in progress should result in a realignment of the current system to make it increasingly responsive. Continued planning for the Libraries should consider contemporary information resources, academic cultures and, correspondingly, changing roles of today's library facilities and services. The Libraries have begun to examine potential consolidation of facilities, and are engaging in partnerships with colleges/schools/departments in such critical areas as information literacy and interdisciplinary research. Progress has been achieved in the Libraries' electronic collections, and this should continue. However, continued attention needs to be given to the challenge faced by the Libraries to meet the learner's and researcher's needs for scholarly information resources in light of rising costs -- an annual inflation rate of nearly 8 percent (whether print or electronic).

#### d) Faculty

**The strategic plan has energized faculty growth with extraordinary success.** The strategic plan has been driving a growth period for faculty numbers. The planned growth of 300 net new faculty is on target and will be completed in FY2008. The new hires have been strategically distributed among colleges based on instructional need, research program growth and prospects, and attention to opportunities for visionary and emerging initiatives. The capacity thus developing is represented by appointments at all academic ladder levels including appointments of several national academy members.

Overall, the entire faculty (all categories -- tenure system, non-tenure system, extension educators, and adjunct faculty) has grown from 2,811 in FY2001 to 3,130 in FY2006 -- an increase of 319 or in excess of 11 percent. This growth has been contributing significantly to the growing research enterprise, as well as improved and broadened learning opportunities for students.

With approximately 150 new faculty appointments per year thus far (including the annual share of the 300 net new positions), and continuing with the general trend of replacements, the entire faculty composition can turn over in about 20 years -- a sea change that would very substantially transform the culture of the academic community. This change has already begun -- the creation of a new class of research professor appointments is but an example of such change. There also is now a new spirit and

creativity in advancing collaborative/interdisciplinary faculty appointments, and in rewarding/compensating deserving faculty.

Faculty stature and recognition has continued to improve. Named and distinguished professors increased from 67 in Fall 2001 to 116 in Fall 2005. However, while memberships in the National Academy of Engineering increased, an already small number of memberships in the National Academy of Sciences declined during this period. In the interest of advancing institutional image, strategies should be developed with high priority to increase these memberships.

Faculty salary and compensation have improved in comparison with the peer institutions but still remains behind. For salary, the gap has narrowed from nearly 10 percent behind the peer average (FY2002) to 7 percent behind for the most recent comparison available (FY2006). There is a strong sense that this gap needs to be closed with aggressive resource development and budgetary initiatives. More favorable competitiveness is evident for total compensation with Purdue's very attractive benefits package, which again is yet more favorable when adjusted for cost of living. However, these factors do not seem to influence this competitiveness nationally, thus rendering salary competitiveness the defining factor.

Purdue has been highly successful in recruiting top faculty candidates with competitive salaries. However, this has also created instances of salary compressions, and even inversions, within departments. This should be carefully addressed since this can adversely affect faculty morale and retention over time.

The rapid growth in faculty numbers is accelerating the need for more support staff, office space, and operating expense support. These increasing pressures on space and S&E expense support also need to be addressed.

#### e) Staff

**Staff growth and development have been focused by strategic plan priorities.** Staff population (administrative, professional, clerical, and service) has increased by nearly 9 percent since FY2001 to 7,375 in FY2006. However, the increase has been more dramatic in administrative and professional ranks -- by nearly 21 percent to 3,566. In addition, graduate student staff has increased by 17 percent to 4,461. This is indicative of the rapid growth in the research enterprise and the information technology enterprise during the last five years, consistent with the strategic plan priorities to grow the research programs and build a state-of-the-art information technology infrastructure.

Overall, staff salary and compensation generally have been competitive with the regional or local comparison groups. However, some groups (e.g., laboratory technicians) are lagging behind. There is also evidence of significant internal disparity among staff salaries within similar groups of employees across the University. There is a strong sense that the external salary competitiveness along with internal equity issues should be examined and appropriate corrective actions be taken.

## f) Students

### **The strategic plan-driven enrollment management has improved student quality.**

The undergraduate enrollment remained virtually flat with 30,899 in Fall 2000 and 30,875 in Fall 2005. The enrollment management scheme at Purdue has been quite successful, very closely meeting the annual enrollment goals. The graduate and professional student enrollment increased by 13 percent, from 6,972 in Fall 2001 to 7,837 in Fall 2006. This growth resulted from deliberate action in line with the priority for growing research programs.

Student quality has continued to improve in line with strategic plan priorities and investments for student recruitment. The average SAT score of entering students increased from 1,095 in Fall 1996 to 1,129 in Fall 2000, and to 1,150 in Fall 2005. The population of national merit scholars also has grown, as has the number of other high achieving students, such as high school valedictorians. Planned growth in nonresident enrollment has contributed toward achieving this increased student quality, and toward meeting the annual tuition revenue targets. Correspondingly, retention and graduation rates also have shown improvement.

The strategic plan priority for maintaining student access has been largely fulfilled. While tuition and fees have increased significantly in the last few years to support the educational priorities of the strategic plan at a time when state appropriations fell short of the needs, Purdue still remained competitive (and a bargain) among its peers and the Big Ten institutions. However, tuition and fee increase has been a concern among students (and their parents), particularly among those in the middle-income bracket, and the average undergraduate indebtedness upon graduation has grown from \$15,486 (9 percent below the peer average) in FY2002 to \$17,510 (2 percent above the peer average) in FY2005.

As tuition and fees increased, Purdue increased the investments in student financial aid based both on need and on merit. Specific financial aid programs have been created, such as the *Purdue Opportunity Awards*, which are dedicated to recruiting economically disadvantaged students from adverse circumstances. In all forms of aid including scholarships/grants, employment, and loans, these investments have grown from \$259.6 million in FY2001 to \$381.1 million in FY2005. This total aid is projected to grow to \$433.3 million in FY2007, a level that exceeds the total tuition revenue. As Purdue seeks to advance with another strategic plan, the impact of future tuition increases should be closely examined vis-à-vis availability of financial aid, student recruitment, retention and graduation rates, and indebtedness upon graduation.

Student demography at Purdue compared to Indiana's income brackets indicates that Purdue has enrolled higher shares of low-income students and high-income students, but a lower share of middle-income students. However, on a system-wide basis including Purdue's regional campuses, this distribution tracks favorably with Indiana's income brackets.

Intercollegiate Athletics continue to pursue their vision of being in the “25/75 Club” -- composite department rank in the top 25 of the 300 Division 1 schools, and 75 percent graduation rate of athletes. The athletes’ graduation rate and their GPA rank higher than the general student body, and progress is being made toward the vision. Purdue’s student Housing and Food Services have been transforming and revitalizing facilities services, and continues to enjoy its reputation of a well-run enterprise. Both of these organizations maintain their fully self-supporting characteristics, with no support from general University funds.

## g) Diversity

### **The strategic plan provided impetus for diversity initiatives with rising success.**

Diversity characteristics at Purdue have improved, but still need more progress. The University has declared a very high priority to improving diversity with leadership emanating from the president, provost, vice presidents, and senior administrators. A number of diversity action plans have been developed and are being implemented. While, improvements in the representation of women and minorities are seen overall, the distribution of their representation has been uneven. In general among the ethnic minority groups within faculty, staff, and students, African Americans, Hispanic Americans, and American Indians continue to remain underrepresented, while Asian Americans have remained overrepresented.

Faculty Diversity: Considerable progress has been made in key areas of faculty diversity. About 58 percent of all new hires (and 64 percent of the strategic plan hires) in the last four years have been ethnic minorities and/or women (with a third each for women and minorities). Overall, the ethnic minority faculty count of 225 in Fall 2000 representing 13.3 percent of the faculty increased to 351 or 19.4 percent in Fall 2005 -- this is a significant improvement, one that is slightly better than the peer average. During this period, women faculty representation increased modestly from 21.7 percent to 23.2 percent, also better than the peer average. However, the distribution of women faculty varies substantially among disciplines, and women in some areas continue to remain underrepresented. Likewise, ethnic minority representation also varies widely across disciplines, and not all ethnic groups are adequately represented.

Staff Diversity: Although showing some recent progress, representation of minority among staff remains almost 70 percent below the peer average. On the other hand, representation of women has continued to be above the peer average. Here too, the distribution of representation varies considerably among staff groups, and across disciplines/job types.

Student Diversity: Domestic minority student enrollment and representations have been on the rise -- from 10.4 percent in Fall 2000 to 12.9 percent in Fall 2005, which is closer to Indiana’s ethnic minority representation. However it remains more than 50 percent below the peer average. Better competitiveness with the peers must be achieved to join their ranks nationally as “diverse” institutions that meet the national representation of minority populations. Representation of women, on the other hand, has dropped slightly from 42.2 percent to 41.1 percent during this period, and it too has been below the peer

average by about 14 percent. While Purdue's program make-up (e.g., large engineering college; and less than the full breadth of liberal arts programs) generally tends to be associated with a lower women enrollment, the declining trend is of concern.

Climate: Campus climate is by far the most influential factor in recruitment, retention, development, and success of faculty, staff, and students. While the climate has continued to improve with various diversity programs and initiatives, there remain several areas that need considerable improvement. A campus-wide survey has identified these areas, and significant initiatives are in progress to address them. These include enhanced program coordination, diversity training for employees and students, outreach efforts, and other programs to enhance the appreciation of contributions of all members of the University community, and preparation of students to participate in a global and multicultural workplace. Investments in diversity initiatives across the University have increased to an estimated \$16 million in FY2006, and more investments are being planned. Further, diversity initiatives have been expanded to address business/procurement areas to enhance Purdue's engagement with women and minority businesses, and signs of early success are evident.

#### h) Agility/Effectiveness/Efficiency

**The strategic plan has rendered Purdue more agile, effective, and efficient.** Purdue has been historically recognized as a very well-run university. This reputation has been even further enhanced in recent years. The strategic plan has played a pivotal role in enhancing the effectiveness of the University and the efficiency with which the University and its units are managed.

Comparison statistics show that Purdue has been operating with significantly fewer resources (in excess of 25 percent below on a per-student basis) compared to the peer institutions while making progress on strategic plan goals. A variety of data confirm Purdue's success in cost containment, effective leveraging of University funds to garner increased levels of extramural funds, efficient management and utilization of space and facilities, effectiveness in meeting enrollment goals, and increased retention of graduates in Indiana. Purdue's excellent stewardship of assets and resources is recognized by the upgraded bond rating (to Aa1) by Moody's Investors Service signifying the University's credit worthiness among the top seven public universities in the nation.

Purdue clearly is more agile today and strategic in its operational culture than ever before. This has been evident through Purdue's responsiveness to external and internal opportunities, on-going reengineering of business processes that will need to continually evolve with changes in the academic and business environments, strategic investments of new and reallocated resources in alignment with the strategic plan goals, and heightened accountability expectations and practice. Without a doubt, Purdue University is now marked by a change in culture toward strategic thinking and planning, and data-driven decisions, actions, and accountability as a result of the strategic plan and related assessment programs.

## 5. National Rankings

**The strategic plan has accelerated Purdue's national/international recognition.** The following recognitions illustrate the significance and breadth of Purdue's reputation and presence in the national/international community of higher education institutions.

- *Times of London* recognized Purdue as 61<sup>st</sup> overall in the world, 28<sup>th</sup> in North America, 22<sup>nd</sup> among U.S. public universities. (2005).
- In various academic programs, Purdue is currently recognized with 41 Top-10 rankings, and 62 among Top-20 rankings in the nation by various ranking publications. Several programs are consistently ranked high -- e.g., Engineering programs, Management programs, Pharmacy, Audiology, Communication, Speech Language Pathology, Analytical Chemistry, Mathematical Statistics, Landscape Architecture, Technology Education, Hospitality and Tourism Management, Veterinary Medicine -- to name a few. (Not all programs are ranked, and those ranked are not ranked every year.)
- Intel Corporation recognized Purdue as 2<sup>nd</sup> nationally in wireless internet capabilities. (2004).
- *The Scientist* magazine has rated Purdue as 2<sup>nd</sup> among the best places to work in academia. (2004).
- Association of University Research Parks recognized Purdue Research Park as the Outstanding Research Park. (2004).
- Southern Growth Policies Board recognized Purdue among the top-12 for economic development. (2002-03).
- *U.S. News and World Report* currently ranks Purdue as 25<sup>th</sup> among the top 50 public national universities.
- *Inside Indiana Business* reported the National Association of College and University Business Officers (NACUBO) ranking of Purdue as 11<sup>th</sup> among public universities in the nation for the market value of their endowments (2005-06).
- *Food Management Magazine* rated Purdue's revamping of its dining services system as one of the best in the nation. (2006).
- *The Center* publication (a University of Florida based organization engaged in comparative analysis of research universities) rated Purdue among the top 25 American research universities (2005).
- Purdue continues with its credit rating to Aa1 status by Moody's Investor Services placing the University's credit worthiness among the top seven public universities nationally.

## 6. Recommendations

Several observations have been made in the previous sections that highlight significant progress toward strategic plan goals and overarching aspects, and also areas that need attention. In addition, prospective issues that are relevant to future strategic planning have also been suggested. The following recommendations attempt to capture the defining characteristics and supportive priorities that address the “big picture” as Purdue looks to the future for renewed strategic planning.

### Defining Characteristics

- Continuation of the core mission and goals -- *Discovery, Learning, and Engagement* - - as the foundation of a renewed strategic plan.
- A refreshed vision recognizing the progress made, and reflecting Purdue’s role as Indiana’s land-grant research university with core commitments in the state, along with a national/global reach and impact involving leadership in the educational environment in a changing world, evolving global economy and the workplace, and global partnerships.
- Reconfirmed or revised peer institutions consistent with a refreshed new vision.
- Advancing interdisciplinary and collaborative endeavors, and sponsored programs toward doubling the extramural funds, and expanding core research facilities.
- A dynamic and robust information resource base responsive to changing needs and roles (information technology, library resources).
- Learning innovations and assessment of student outcomes that ensure a superior education, and a broadened social/global understanding.
- Accelerated engagement in state economic development with focus on entrepreneurship.
- Aggressive pursuit of institutional diversity -- including demographic mix, culture, climate, and business and other external relations.
- Accelerated improvement of faculty and staff competitiveness -- compensation and recognition (e.g., National Academies).
- Continuation of investments in research infrastructure and signature initiatives.

### Supportive Priorities

- Pursuing state appropriations for inflationary increases and program priorities of distinct value to the state.
- Proposing special tuition increases targeted to new strategic plan priorities that benefit students, with due regard to maintaining student access through financial aid, and with an eye toward curbing student indebtedness upon graduation.
- Expanding student aid to balance with Indiana’s income demography, and nationally competitive students (based on need and merit).
- Increasing supportive resources -- supplies and equipment funds (S&E); support for leadership and expertise to engage in formalized and systematic student learning assessment.
- Developing criteria for considering contributions in engagement in faculty promotion and tenure.

- Developing a post-campaign plan, and a plan to prepare for a new campaign.
- Seeking alternative revenue sources and/or privatizing selected programs/services.
- Expanding support services such as childcare facilities/services.
- Reexamining scope of reallocations and priorities for programs and services.
- Continued development of learning facilities commensurate with enrollment and academic program needs.
- Developing a sustainability plan for the expanding physical plant (R&R).
- Promoting a model for systematic and pervasive attention to energy conservation.

## 7. Conclusion

**Purdue's strategic plan -- *The Next Level: Preeminence* -- has been remarkably successful in steering the university toward its vision, creating a culture of strategic thinking, and a sense of excitement, accomplishment, energy and pride.** The University is clearly arriving at the next levels of its defining characteristics and endeavors in discovery, learning, and engagement with improved reputation and national competitiveness. The creation of Discovery Park, doubling the sponsored programs, improved quality of students and graduates, unprecedented fund raising, addition of 300 net new faculty, and active engagement in state economic development -- are all transforming the discovery, learning, and engagement culture and environment at Purdue.

The conclusion of the plan in another year will see more significant achievements. It will also have begun several visionary initiatives that will need to be nurtured to bring them to fruition. Thus, it will be important to stay the course with these initiatives and programs to deliver on the promise. To that end, continuing to improve faculty and staff competitiveness and student quality, growing and sustaining a robust resource base, and a sustained state-of-the-art infrastructure are of paramount importance.

The review has suggested that the next strategic plan should position Purdue to go beyond fulfilling the core commitments to the state, and further expand its reach nationally and toward a significant global presence and impact. Purdue has been attracting national/international attention for quite some time with reputable programs, a growing nonresident student body, a large population of international students, partnership programs nationally and abroad, and recent expressions of collaborations from national and international institutions and organizations. Thus, significant opportunities have been emerging that can be captured for new visionary initiatives to further Purdue's impact -- as a land-grant research university, and as a powerhouse of basic and applied sciences, and engineering in the world -- with the range of great responsibilities that come with this stature.

Purdue has arrived at a pervasive culture of strategic thinking, planning, actions and accountability, and is positioned for continued success. A new strategic plan with a refreshed vision will build on Purdue's strength and continuing progress, and render the University nationally as the model for a modern land-grant research university, and globally as the leading university of choice for collaborations and partnerships in discovery, learning, and engagement.