

Cornell University

# Periodic Review Report

presented by:

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## CHAPTER ONE: EXECUTIVE SUMMARY

### CORNELL UNIVERSITY MISSION STATEMENT

Cornell is a learning community that seeks to serve society by educating the leaders of tomorrow and extending the frontiers of knowledge.

In keeping with the founding vision of Ezra Cornell, our community fosters personal discovery and growth, nurtures scholarship and creativity across a broad range of common knowledge, and engages men and women from every segment of society in this quest. We pursue understanding beyond the limitations of existing knowledge, ideology, and disciplinary structure. We affirm the value to individuals and society of cultivation and enrichment of the human mind and spirit.

Our faculty, students, alumni, and staff strive toward these objectives in a context of freedom with responsibility. We foster initiative, integrity, and excellence, in an environment of collegiality, civility, and responsible stewardship. As the land-grant university for the state of New York, we apply the results of our endeavors in service to our alumni, the community, the state, the nation, and the world.

*"I would found an institution where any person can find instruction in any study."  
Ezra Cornell, 1865*

Cornell's founding mission has bred a university complex in structure, enterprising in nature, and innovative in result. Cornell is a private university with a land-grant mission, committed to leadership in research and education and to the extension of knowledge and discovery into the world. Chartered as New York's land-grant university by an 1865 act of the New York legislature, Cornell was conceived as a democratic, nonsectarian "people's college," where men and women from all backgrounds and ethnicities could receive instruction in any subject worthy of academic attention. The university boasts a world-class faculty engaged in leading research in a wide range of fields, well known for its strength in key disciplines as well as for its leadership in strategic interdisciplinary domains.

Distinctive in the Ivy League, Cornell is committed to all three American university missions: teaching, research, and public service as a land-grant institution. These missions were present at the founding and remain vividly alive today.

Ezra Cornell envisioned a "university of the first magnitude," dedicated to both classical and practical studies. The university's first president, Andrew Dickson White, predicted an "asylum for science, where truth shall be sought for truth's sake." Both men drew inspiration from Senator Justin Morrill, the author of the 1862 federal land-grant act, who was explicitly encouraging the development of higher education in the agriculture and mechanic arts. Fredrick Rudolph, in his book *Curriculum*, described the founding in this way: "Cornell brought together in creative combination a number of dynamic ideas under circumstances that turned out to be incredibly productive.... Andrew D. White...and Ezra Cornell...turned out to be the developers of the first American university and therefore the agents of revolutionary curricular reform."

Cornell comprises thirteen schools and colleges: eleven in Ithaca and the Joan and Sanford I. Weill Medical College and its Graduate School of Medical Sciences (with campuses in New York

City and Doha, Qatar). The eleven units in Ithaca include seven undergraduate units (the College of Architecture, Art, and Planning, the College of Arts and Sciences, the College of Engineering, the School of Hotel Administration, the College of Agriculture and Life Sciences, the College of Human Ecology, and the School of Industrial and Labor Relations) and four graduate or professional schools (the Graduate School, the Law School, the Samuel Curtis Johnson Graduate School of Management, and the College of Veterinary Medicine). Four of the Ithaca units (Agriculture and Life Sciences, Human Ecology, Industrial and Labor Relations, and Veterinary Medicine)—referred to as the “contract colleges”—are operated by Cornell under contractual arrangements with the state of New York. Cornell has composed a unique academic experience from an extraordinary array of schools and programs.

Hallmarks of Cornell’s undergraduate educational experience are:

- teaching, mentoring, and advising by the best scholars;
- integrated living/learning environment;
- opportunities for undergraduate research;
- the quality of students with whom each student has an opportunity to live and work;
- engagement with a diverse body of students, faculty, and staff; and,
- accessibility, regardless of ability to pay.

Cornell has historic strength in science and engineering, with a breadth and depth of programming rivaled only by the major flagship public universities and a very few privates. During 2004–05, Cornell expended \$561 million in external and internal funds for research support. At Ithaca, the university received \$313 million in sponsored research monies, plus an additional \$38 million in core research support to the contract colleges from the federal and state governments. The Medical College garnered \$156 million in sponsored research funds during the same period. In 2003, Cornell ranked tenth in the nation in federal obligations for science and engineering, up from twentieth in 1999.

In addition to its strength in sciences, Cornell has some of the nation's strongest programs in English literature, comparative literature, many of the major language programs, philosophy, linguistics, and history. In professional education, Agriculture, Architecture, Engineering, Hotel Administration, and Veterinary Medicine routinely rank in the very first tier of the country’s institutions of higher education. Cornell’s Law School, the Johnson School of Management, and the Weill Cornell Medical College are all poised to move into the top tier. Complementing the academic disciplines, the Cornell University Library is one of the most distinguished research libraries in the nation.

Cornell has been a selective, competitive member of the Ivy League since its inception. Over the last decade, it has consistently improved its competitive position, even while the size of its undergraduate student body increased. The university enrolled 13,684 undergraduates in fall 2005, an enrollment that is roughly 3,000 full-time students larger than that of the next largest Ivy and significantly larger than the undergraduate enrollment of most Ivies or Ivy equivalents.

Cornell University is a large and complex institution. It maintains a critical budgeting—but not academic—distinction between contract (with New York State funding) and endowed colleges, promotes both applied and basic research, cultivates interaction between two major campuses, and works globally. The founders’ broad educational vision and the combination of private and public resources have produced a system of decentralized administrative structures and rich intellectual diversity.

Leadership of such a complex organization is a challenging task. The sixty-four-member Board of Trustees, a Faculty Senate composed of over 100 faculty members, the president’s and provost’s

staff, including deans for each of the colleges, and four assemblies all work in concert to steer the university. Cornell is currently undergoing a transition in its presidency, but the bulk of the institutional leadership within the university remains unchanged and is providing the continuity needed to ensure the university maintains momentum and remains focused.

The Weill Medical College and Graduate School of Medical Sciences of Cornell University is located in New York City and Doha, Qatar. In 1980, the Board of Trustees established a Board of Overseers for the Medical College and Graduate School, composed of trustee and non-trustee public members, with delegated authority for much of the operation of the medical campuses up to limits set by the Board. On campus, the faculty is represented by an Executive and a General Faculty Council for the Medical College and an Executive Committee for the Graduate School. The Provost for Medical Affairs, who is also the Dean of the Medical College, is a member of the president's executive staff.

President Rawlings described the theme for a strategic direction for Cornell in his 1995 inaugural address, in which he called upon the Cornell community to join him in "composing a new Cornell." President Rawlings articulated a goal in 1998 to become "the best research university for undergraduate education." In support of this goal, during President Rawlings's tenure, the university identified nine priorities that remain the focus of institutional efforts today. Of these nine, three priorities are at the forefront:

- Improve undergraduate education, taking advantage of Cornell's strengths as a research university. Transform the residential experience to create a living-learning environment that will benefit all first-year students and provide new opportunities to all undergraduates.
- Support strategic enabling research in computing and information sciences, the life sciences, and advanced materials science. Increase cross-college collaboration in those and other emerging areas.
- Enhance developments in the humanities and the social sciences.

Cornell has synthesized these priorities into a new, overarching goal for the future—to be the leading academic citizen in an increasingly interconnected world, enabling faculty and students to make transformative contributions that enhance the diversity and quality of life and extend Cornell's reach. In the last five years, Cornell has invested significantly in its undergraduate academic and student life experience and has refocused its research mission. Cornell continues to make progress in these areas, and others, as this review will highlight.

### **Summary of the Major Institutional Changes and Developments**

The following is a summary of the major institutional changes and developments, detailed in this review, which occurred since the writing of the Decennial Reaccreditation Self-Study of 2001:

- Continued development of living-learning environment and the Residential Initiative—Cornell enhanced programming on North Campus and opened two new residential houses on West Campus.
- Enhanced developments in the humanities and the social sciences—creation of the Institute for the Social Sciences.
- Continued investment in strategic enabling research areas—began recruiting faculty for the New Life Sciences Initiative and began construction of the Life Sciences Technology Building; completed construction of Duffield Hall, one of the country's most sophisticated research and teaching facilities for nanoscale science and engineering.

- Improvement of faculty and staff compensation—Cornell is close to reaching its goal of raising Cornell faculty salaries to the average of peer groups and is making progress on its goal, stated in terms of external market averages, for staff salaries.

Additionally, Dr. David J. Skorton, president of the University of Iowa, was appointed Cornell University's 12th president by the Cornell Board of Trustees in January 2006. A cardiologist, national leader in research ethics and musician, Skorton, 56, will assume the presidency on July 1, 2006. He will hold faculty appointments in Internal Medicine and Pediatrics at Weill-Cornell Medical College (WCMC) in New York City, and in Biomedical Engineering at the College of Engineering on the Ithaca campus. Hunter R. Rawlings will continue to serve as Cornell's interim president until Skorton takes office.

### **Abstract of the Highlights of the Periodic Review Report**

#### *Chapter Two: Institution's Response To Recommendations*

No formal recommendations were made in the June 2001 Final Report of the Evaluation Team representing Middle States Association Commission on Higher Education. Although there were no formal recommendations requiring institutional response, Cornell has taken the suggestions and comments raised throughout that process seriously, and comments are made on many of them throughout this report.

#### *Chapter Three: Challenges and Opportunities*

This chapter emphasizes three priorities at the forefront of Cornell's institutional efforts.

- Improve undergraduate education, taking advantage of Cornell's strengths as a research university. Transform the residential experience to create a living-learning environment that will benefit all first-year students and provide new opportunities to all undergraduates.
- Enhance developments in the humanities and the social sciences.
- Support strategic enabling research in computing and information sciences, the life sciences, and advanced materials science. Increase cross-college collaboration in those and other emerging areas.

Over the next ten years, growth in these three areas will shape the character of Cornell for many decades to come. In teaching, Cornell will engage all students, and especially undergraduates, in genuine scholarship and research in science, the humanities, and the social sciences. In research, Cornell's scope and growing interaction among the disciplines in the biological, physical, and information sciences will push the frontiers of knowledge, induce profound changes in undergraduate and graduate curricula, and advance the university's national and international preeminence in key strategic fields.

#### *Chapter Four: Enrollment and Finance Trends and Projections*

Chapter Four contains an analysis of enrollment and financial projections for the next five years. Cornell remains financially strong with adequate long-term and short-term resources to support both current and new initiatives.

#### *Chapter Five: Assessment Processes and Plans*

This chapter describes Cornell's approach to student learning assessment and the assessment activities that take place. The institution sets forth shared educational values, principles, and goals, and uses a variety of measures to determine the extent to which student learning is occurring and is supported.

As its mission implies, Cornell also has a strong history of opening its doors to “any” student and is advantaged by the diversity of backgrounds and perspectives of its student body. These two elements have a compound effect, producing a multitude of unique, personal educational experiences for its students. The diversity of learning paths available to Cornell students, combined with Cornell’s mission, makes the institution’s approach to student-learning assessment multifaceted. Key programmatic and pedagogical decisions regarding assessment are made within each college, and many times at the program level where the most relevant expertise resides.

Each college at Cornell defines its own specific student-learning goals that are appropriate for that college, but the colleges’ goals reflect institutional commitments. At the institutional level, Cornell’s goals can be captured by broad learning categories: cognitive complexity, knowledge acquisition and application, humanitarianism, interpersonal and intrapersonal competence, and practical competence. Cornell’s mission statement asserts, “Cornell is a learning community that seeks to serve society by educating the leaders of tomorrow and extending the frontiers of knowledge.” Strong development of these cognitive skills, among many others, is crucial for students to reach the goal of becoming tomorrow’s leaders.

Cornell has established measures that promote the successful attainment of its student-learning goals at the institutional level, and also at the college, program, and course level, in both the academic and the nonacademic environment, including the residential experience. Direct and indirect measures are utilized to not only create a full picture about how much learning occurs but also to better understand the factors influencing the learning.

Cornell’s institutional student-learning goals capture, at a broad level, the general values and aspirations that underlie the more specifically stated learning goals existing within each college. Each college has gone through a process of defining student-learning goals and plans regarding assessing learning in ways that are meaningful for them. The chapter contains some examples of student learning assessment activity that currently occurs within the colleges.

#### *Chapter Six: Planning and Budgeting Processes*

As highlighted in this chapter, planning at Cornell is a continual process focused on fulfilling institutional and unit priorities and identifying, allocating, and reallocating resources as necessary to achieve these objectives. Cornell plans for the future thoughtfully, with multiple planning processes at many levels within the organization. Cornell’s institutional priorities, highlighted in Chapter Three, were shaped as the result of a comprehensive planning effort a decade ago. The priorities that were articulated then remain the focus today, affirming that the strategic process responsible for their creation was appropriately rigorous, ambitious, and insightful.

Academic planning drives the budget process. The provost works regularly with the Academic Council (a group of faculty leaders who represent areas of strategic emphasis for the university) and deans and that informs, in turn, the budget processes that follow. Resource allocation is the result of a thoughtful process of self-examination and is an inherent part of ongoing activities. Other planning activities occur more regularly within functional areas, colleges, and programs, both in the academic and nonacademic realms. These activities supplement and support the larger institutional priorities as well as provide direction at the local level.

The chapter includes a description of planning activities in the areas of academic planning, strategic planning and assessment, annual reports and budget planning, campaign planning and fundraising, and capital planning.

## **CHAPTER TWO: INSTITUTION'S RESPONSE TO RECOMMENDATIONS**

No formal recommendations were made in the June 2001 Final Report of the Evaluation Team representing Middle States Association Commission on Higher Education. Evaluators Nan Keohane and her colleagues provided an extremely valuable report that was, as President Hunter Rawlings said, "an accurate reflection of how Cornell's complexity challenged the team, how our multiplicity of strengths impressed them, and how our opportunities for improvement seriously engaged them."

Although there were no formal recommendations requiring institutional response from the 2001 report, Cornell has taken the suggestions and comments raised throughout that process seriously, and comments are made on many of them throughout this report.

## CHAPTER THREE: CHALLENGES AND OPPORTUNITIES

The following institutional priorities have provided focus for Cornell since before the Decennial Reaccreditation Self-Study of 2001. They support the goal of becoming “the best research university in the country for undergraduate education,” and they remain the focus today:

- Improve undergraduate education, taking advantage of Cornell’s strengths as a research university. Transform the residential experience to create a living-learning environment that will benefit all first-year students and provide new opportunities to all undergraduates.
- Enhance developments in the humanities and the social sciences.
- Support strategic enabling research in computing and information sciences, the life sciences, and advanced materials science. Increase cross-college collaboration in those and other emerging areas.
- Continue to improve faculty and staff compensation.
- Increase information technology capabilities for Cornell students, faculty, and staff.
- Revise undergraduate admissions and recruiting to reflect a university-wide image of Cornell in the national/international marketplace.
- Fortify Cornell’s long-term relationship with New York State and SUNY.
- Maintain broad student access to a Cornell education.
- Enhance diversity within and among Cornell’s faculty, staff, and students.

This report will emphasize the first three priorities, which are at the forefront of Cornell’s institutional efforts. Over the next ten years, growth in these three areas will shape the character of Cornell for many decades to come. In teaching, Cornell will engage all students, and especially undergraduates, in genuine scholarship and research in science, the humanities, and the social sciences. In research, Cornell’s scope and growing interaction among the disciplines in the biological, physical, and information sciences will push the frontiers of knowledge, induce profound changes in undergraduate and graduate curricula, and advance the university’s national and international preeminence in key strategic fields.

### IMPROVING UNDERGRADUATE EDUCATION

In its Decennial Reaccreditation Self-Study of 2001, Cornell gave special emphasis to undergraduate education. Three areas were identified as equally important—the living-learning environment, the undergraduate curriculum, and the role of advising. The report provided a detailed description of the typical decisions the colleges were and would be making regarding their curricula and the processes that supported those decisions. Those decision processes remain relevant today. In the task of creating a rich living-learning environment, significant progress continues to be made, and the role of advising at Cornell continues to be examined. An update follows.

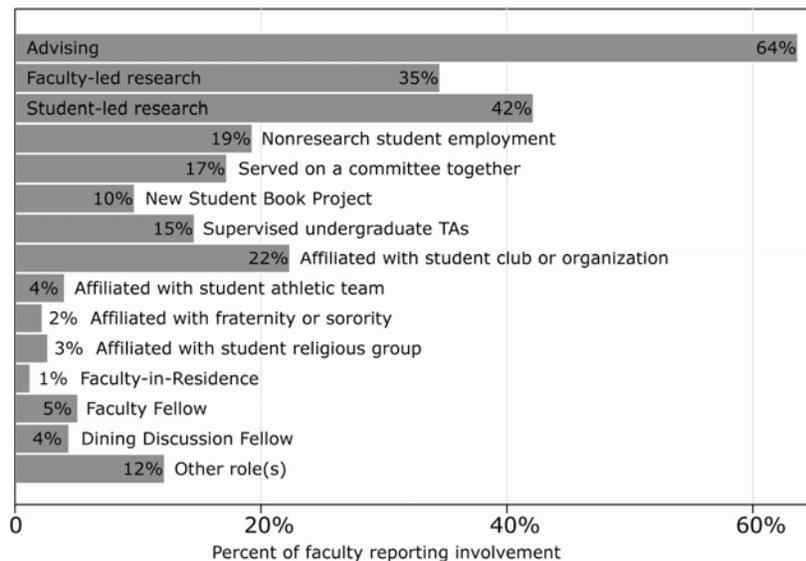
#### Living-Learning Environment

Cornell launched an effort in 1997 to transform the undergraduate experience through the Residential Initiative. The Residential Initiative is a plan to create “living-learning” environments for undergraduates—to make the residential experience a fundamental introduction to the university and a cohesive combination of student life inside and outside the classroom.

Central to the living-learning environment is the belief that more faculty interaction with undergraduates creates a richer intellectual experience for students. In 2004, Cornell surveyed the faculty (with 62% responding) to gain further insight into the nature and extent of faculty engagement in the life of students outside the classroom. This data is foundational in nature and

will be helpful to Cornell in that it provides strong baseline indicators. Aggregating across the diverse roles, eight out of ten responding faculty were engaged in out-of-class interactions with undergraduates (see Figure 1). These percentages are slightly higher within the undergraduate colleges and among tenured or tenure-track faculty. While a minority of faculty were involved in any given role other than advising, it remains the case that a substantial majority of responding faculty were involved in out-of-class interactions even if undergraduate advising was excluded.

Figure 1. Percent of Faculty Involved with Undergrads through the Following Roles, F'03



Some of the most dramatic changes occurring in 2001, at the time of Cornell's Decennial Report, were the creation of Phase I, the North Campus Initiative, and the designing of Phase II, the West Campus experience. The North Campus Initiative is now entering its sixth year of operation. Phase II, a \$200 million effort to create residential college-like houses on the West Campus, is well under way. Cornell is using various surveys and assessment tools to monitor the progress toward strategic goals for the initiative. The spring 2006 senior survey (administered once every four years), will help to fill in the picture about how the student experience is being enriched.

The \$65 million North Campus Initiative included the construction of new residence halls and dining facilities, the relocation of athletic fields, the creation of new faculty-in-residence apartments, and the renovation of some existing residence facilities. The new facilities and programming for this initiative permit all entering freshmen, numbering approximately 3,050 each fall, to live together in a newly structured campus community and to have a shared intellectual experience. Housing all freshmen together helps reduce the barriers that separate students from each other and enables each freshman class to develop a sense of identity and community.

More than 100 faculty are involved in the North Campus Initiative. Eight of them are Faculty-in-Residence, living in a residence hall, involved on a daily basis with students, and attending out-of-the-classroom events with them. Seventy-five are Faculty Fellows, who interact with students in a similar role without living in the residence hall. Twenty-one are Dining Discussion Fellows, who host weekly meal discussions on topics that are often academic in nature. In 2002-03, the last year surveyed, there were 1768 events for students on North Campus, and of those, 547 involved faculty. Events included local cultural events, community service, intellectual discussions over

meals, and trips to places such as the United Nations and Harlem in New York City and the Holocaust Museum in Washington, D.C. The graduating class of 2005, which matriculated in fall 2001, was the first class to experience the North Campus Initiative.

North Campus includes an innovative center for first-year students called the Carol Tatkon Center, which opened in August 2003. The center enhances the connection between academic and nonacademic programs and services for first-year students, creates opportunities for increased interaction with knowledgeable upper-level students and faculty who can be resources, and provides initiatives that not only support but also encourage first-year students to explore new opportunities and experiences.

The Center hosts poetry readings, art exhibits, a walk-in writing service, panel discussions with alumni, study-skills workshops, and walk-in counseling hours. For specific courses, there are course-review sessions, supplemental courses for biology and chemistry, and TA office hours for math, biology, nutrition, psychology, and chemistry. Additionally, courses are held at the center, including 21 (of the 175) first-year writing seminars. The Carol Tatkon Center, which is in close proximity to residence halls, offers comfortable and welcoming spaces, laptop lending in a wireless environment, and a browsing library stocked with books by Cornell authors, making it a popular place for students to meet with their peers, upper-level mentors, advisors, and professors.

One very successful program that has been strengthened by the North Campus Initiative is the New Student Reading Project. Together with their entering classmates, professors, continuing students, and the Cornell and Ithaca communities, new Cornell students discuss, criticize, and evaluate the same book at required campus events during the university's orientation week. This includes a large-group symposium and small-group discussions. The New Student Reading Project celebrated its fifth anniversary in fall 2005 with Nigerian author Chinua Achebe's novel *Things Fall Apart*. In addition, this year, nearly 5,000 students from fifty-nine high schools in seventeen New York counties and New York City joined Cornell in reading *Things Fall Apart* as part of a statewide pilot program coordinated through Cornell Cooperative Extension and the 2005 New Student Reading Project at Cornell.

Phase II of the Residential Initiative, West Campus, is well under way. West Campus is a continuation of the North Campus experience, allowing sophomores, juniors, and seniors to continue to live in a living-learning, shared intellectual environment. The \$200 million West Campus project will replace the Class Halls and Noyes Center with five new residential houses and a recreation/community center. In August 2004, about 360 upper-level students became the founding residents of the Alice H. Cook House, the first of five houses. The Carl L. Becker House welcomed its first residents in fall 2005, providing students and faculty with the opportunity to integrate living and learning in ways that are unprecedented at Cornell. These residences have been the first to be selected in the annual housing lottery for continuing students, indicating a high level of student excitement for the initiative. The Hans Bethe House and the Noyes Community Recreation Center are on schedule to open in 2007. The fourth and fifth houses will be open by fall 2009.

The West Campus houses represent a significant departure from the way in which Cornell has historically viewed and administered student residences on campus. The houses aim to increase the opportunities for everyday interactions between students, faculty, staff members, and visiting guests by having events, resources, and services all under one roof. Each West Campus house is led by a House Dean, who is selected from among the distinguished and energetic tenured members of the Cornell faculty who are devoted to faculty-student interaction beyond the traditional classroom.

At West Campus, students have opportunities to talk person-to-person with luminaries from across fields and professions. For instance, during fall 2004, former Attorney General Janet Reno lived at Cook House in the guest room for a week and gave a series of talks, shared meals with students, and attended a benefit dance party in her honor. West Campus has hosted small events and dinners with former CNN news anchor Aaron Brown, neurologist Oliver Sacks, Nobel Peace Prize winner Shirin Ebadi, and many others. Students take classes at West Campus and current courses offered include five writing seminars. House dinners are one way students and faculty get to know each other outside of classes. There are currently thirty-three house fellows in Cook House, and thirty-four house fellows in Becker House. House fellows attend Wednesday night house dinners, stop in for meals, take students to local cultural events, and give open talks. President Hunter Rawlings and Dean of the Colleges of Arts and Sciences, Peter Lepage, have served as house fellows.

Improving the residential experience also involves implementing a fraternity and sorority plan called Creating Chapters of Excellence (CCE)—an initiative to improve the experiences found in Greek life on campus by focusing on educational, cultural, and service programming. This program aims to promote high chapter performance as well as provide quality educational and cultural programming at the chapter level. Several examples of chapter programs sponsored by CCE include hosting noteworthy campus visitors such as former Governor Howard Dean and U.S. Poet Laureate Ted Kooser.

To complete the living-learning vision, Cornell will continue to marry program and residence in innovative ways. The university and academic leadership have begun the task, exploring at the college, departmental, and university levels new ways to link the undergraduate academic and residence experiences to the excitement of discovery that is inherent in a research-based university.

### **Undergraduate Advising**

In 2000, Cornell's Academic Advising Committee reviewed the status of first-year, pre-major advising at Cornell. The committee's work was based on the fundamental premise that all Cornell students should have advising relationships that promote their academic integration into the intellectual community of Cornell, into their specific college, and in some cases, into a specific academic department.

The committee focused on several critical areas necessary for creating a successful advising program: advisor selection and training, information for students and advisors, orientation programs and first-semester courses, student-support services and early-warning programs, incentives and rewards, and assessment. The committee's recommendations were comprehensive. The committee members acknowledged pockets of advising success at Cornell, but stated that more needed to be done to share those best practices across campus. The members recommended that all colleges implement effective training programs for individuals involved with advising students; that additional incentives be put in place, such as making advising a separate item in faculty review; that a university fund be created to assist colleges in pilot programs and advising awards; and that each college establish a formal procedure, linked to its annual reports, for periodically evaluating advising programs and advisors. Some of the recommendations from the committee have been addressed in some of the colleges, as appropriate to their individual missions and learning goals. Because Cornell offers such breadth and diversity of programs, advising plays an important role in helping students navigate their studies. But Cornell's size makes advising, particularly first-year advising, difficult—one person (or centralized advising function) cannot be expected to fully understand or catalog the richness inherent in seven undergraduate schools and colleges. To expect this depth of knowledge for all

advisors is not possible. Many strong university-wide programs are in place to provide different advisory services to students. These include the Internal Transfer Division, which assists students who are considering transfer between undergraduate colleges within Cornell by providing counseling and advice; Career Services; the EARS (Empathy, Assistance, and Referral Service) program; and Gannett Health Services. Additionally, there is a new foundation being built in the living-learning environments in terms of special opportunities for faculty to develop advising and mentoring relationships, and all colleges have early-warning programs in place to recognize when a student is struggling.

The associate deans from each college meet regularly with the vice provost for undergraduate education. This group has recently decided to examine this area, reviewing the analysis that has been done in the past and seeking new ways to make progress in sharing best practices and improving advising campus wide.

### **Other Actions Concerning Undergraduate Education**

Shortly after the Decennial Reaccreditation Self-Study of 2001, Cornell created a new position of vice provost for undergraduate education. Among the initiatives the office oversees are the West Campus Residential Initiative (in concert with the Division of Student and Academic Services), the New Student Reading Project, and the Alumni-Student Mentoring Program. In June 2005, Michele Moody-Adams, professor of philosophy, the Hutchinson Professor of Ethics and Public Life, and director of the university's Ethics and Public Life program, became the second appointee to the role. Moody-Adams will continue to oversee the Ethics and Public Life program in her new role, which presents the opportunity to strengthen the link between the living-learning initiatives and the focus on exposing all new Cornell students to ethical reasoning.

### **ENHANCING DEVELOPMENTS IN THE HUMANITIES AND THE SOCIAL SCIENCES**

Cornell has made the commitment to stay in the leadership of some of the most compelling science of our time while continuing to strengthen the university's programs in the humanities and social sciences. In particular, the environmental and social impacts of technological change—the sustainability of modern society—must be addressed as advances in understanding are made. Compared with the cost associated with enhancing frontier science, relatively modest investments in hiring and research for the humanities, the arts, and social sciences can achieve compelling results.

The university has undertaken a range of measures to ensure that Cornell continues to lead in the arts, the social sciences, and the professional schools. The university is renewing the faculty and facilities across those disciplines, having invested in the renovation and expansion several years ago of Lincoln Hall for Music, the renovation of Tjaden Hall for Art, the complete renovation of White Hall for Government and Near Eastern Studies, and now the planned addition of Milstein Hall for Architecture and the renovation of Bailey Hall for public concerts. The School of Industrial and Labor Relations has opened its new conference facility, and work is beginning on the replacement of Human Ecology's north wing of Martha Van Rensselaer Hall. Cornell has increased research funding for humanists; added faculty positions in Government, Economics, and Near Eastern, Latino, and Asian American studies; and endowed the directorship of the still relatively new Institute for the Social Sciences. The Law School, College of Veterinary Medicine, and the Johnson Graduate School of Management offer professional students state-of-the-art resources and education by dedicated teachers. Both the Law School and the Johnson School have plans to respond to changes in the professions of law and management.

Cornell has been building strength in core social science disciplines, leading to several initiatives, including programs in poverty and development and life course studies, enhancements in multi-

departmental collaboration in American studies, increased emphasis on international studies, and the establishment of the Social Sciences Advisory Council and the Institute for the Social Sciences.

The Institute for the Social Sciences was established in 2004 with the support of the president and provost. The institute is modeled in part on two other Cornell institutions, one long established—the Society for the Humanities—and the other of more recent vintage—the Cornell University Social Sciences Seminar. Each year the institute brings together about a dozen faculty members, mostly from Cornell, to work on a common theme. The goals of the institute are to encourage collaborations among social scientists across disciplinary and institutional boundaries, to engage the Cornell community—students, faculty, and staff—in discussions of cutting-edge topics in the social sciences, and to assist departments and programs in attracting and retaining top social science faculty. David Harris, professor of sociology and active in Cornell's Center for the Study of Inequality, is the current executive director of the Institute for the Social Sciences and is also the vice provost for social sciences, a new role created in 2005.

### **SUPPORTING STRATEGIC ENABLING RESEARCH**

In its Decennial Reaccreditation Self-Study of 2001, Cornell emphasized its intention to focus resources and attention on “strategic enabling research areas” in computing and information sciences, the life sciences, and advanced materials science, while increasing cross-college collaboration in these and other emerging areas. A 1997 task force of faculty, deans, and administrators identified these three enabling research areas and defined them as areas in which Cornell must be world class to remain a top-ranked institution. They are areas likely to figure prominently in the most far-reaching human achievements of the next thirty to forty years. They promise to underlie a great variety of technological advances in everything from communications to medicine, with the potential of altering human life as fundamentally and as completely as the development of the computer or the introduction of antibiotics a half-century ago. They are also areas in which Cornell already has an enormous base of faculty expertise and resources spread across many departments and all the colleges of the university. These disciplines are being advanced through a phalanx of initiatives that include new facilities, enhanced external funding, and the reallocation of internal resources. These advancements will help Cornell stand out in an increasingly competitive environment for research and scholarship support.

Cornell continues to build great strength in these three strategic research areas in the sciences, enabling it to remain a world-class research university in sciences and engineering. These areas provide extraordinary opportunities for research achievement in their own right, and they are fundamental to the progress of work in a great many other fields. The university's faculty are now engaged in an effort to broaden approaches to the revolutions in the life sciences and in digital information, asking what perspectives the social sciences, arts, and humanities can and must bring to the changes in science and technology.

Investments in nanotechnology and advanced materials and in computing and information sciences will keep Cornell at the forefront of discovery and teaching in those critical interdisciplinary domains. Since 2001, developments in nanoscience (originally envisioned as part of advanced materials science) have expanded so rapidly that the area is now included by name in advanced materials science.

The university's New Life Sciences Initiative is the largest and most wide reaching academic project ever undertaken by Cornell. The New Life Sciences Initiative promises to bring enormous benefits to humankind in curing disease, raising the yield and quality of food crops, improving livestock, and aiding the environment. The initiative involves seven colleges and several hundred

faculty members, from approximately sixty departments, in an interdisciplinary research and education program.

The first phase of the New Life Sciences Initiative was predicated on the assertion that the new life sciences would be a fusion of what had largely been three disparate fields: organismal and cell biology, physical and engineering sciences, and computer science and mathematics. These fields cut across many departments and colleges, and as such, it became clear that it would no longer be appropriate to plan and recruit new life sciences faculty exclusively on a department- or college-specific basis. The result is a new strategy for creating and recruiting new faculty positions, leading to a highly interactive and synergistic cohort of faculty. Over 100 new faculty members are expected to be appointed as part of this initiative – twenty have already been recruited. Also, the graduate fellowship program was expanded to what will eventually be 100 Presidential Life Sciences Fellowships per year, providing graduate fellowships dedicated to the life sciences. The New Life Sciences Initiative is administered by the vice provost for life sciences. On a day-to-day basis, the activities are coordinated through twelve individual focus groups with oversight from the Internal Life Sciences Advisory Council and an External Life Sciences Advisory Council that meets every two years.

The New Life Sciences Initiative seeks new methodologies for rapid DNA sequence detection, computational and statistical tools to manage and analyze the data, and the use of Cornell's biological expertise to link DNA sequence to function in the cell, the organism, and the environment. Genomics will be linked with such areas as neuroscience, basic ecology, and environmental science. The Life Sciences Technology Building will serve as the hub for many of these facilities engaged in functional and comparative genomics, as well as other interdisciplinary, technology-driven activities, including computational biology, biomedical engineering, nanobiotechnology, and biophysics.

Construction began in spring 2005 on the Life Sciences Technology Building, a 250,000-square-foot facility that will include state-of-the-art communication technology to provide links to businesses and other universities, medical schools, and research laboratories statewide. Among the most innovative aspects of the new building will be the first incubator on the Cornell campus for startup companies in the life sciences. The building will bring together researchers and students in a diverse range of disciplines, including physical sciences, engineering, and computational sciences, not only to conduct research, but also to apply their research to problem solving in human medicine, veterinary science, sustainable agriculture, and environmental remediation.

Like the proposed Life Sciences Technology Building, Duffield Hall also is a visible manifestation of the several hundred million dollars of investment in these strategic enabling research areas. Duffield Hall was completed in October 2004 and is one of the country's most sophisticated research and teaching facilities for nanoscale science and engineering. It supports research and instruction in electronic and photonic devices, microelectromechanical devices, advanced materials processing, and biotechnology devices, bringing together many of the nanotechnology and materials-development groups that previously did their work independently in various parts of the campus. The facility also provides a new home to the Cornell Nanoscale Science and Technology Facility (CNF) in Knight Laboratory, as well as Cornell's Nanobiotechnology Center and portions of the Cornell Center for Materials Research.

Emphasizing these research areas will help make Cornell the best research university in the country for undergraduate education. For example, Duffield Hall is the home of the National Nanotechnology Infrastructure Network (NNIN), which conducts one of the largest and most successful Research Experience for Undergraduates programs in nanotechnology. NNIN is a

program funded by a cooperative agreement with the National Science Foundation as a national resource for nanoscience instrumentation. Undergraduates taking part in this ten-week program receive hands-on nanoscience and technology experience through research with applications to bioengineering, chemistry, electronics, materials science, optics, optoelectronics, physics, and the life sciences. The research projects are designed and supervised by the faculty and technical staff at the NNIN research facilities. Students are assigned to a specific research project in which they make a meaningful research contribution to their research group. Each project involves hands-on nanotechnology research with state-of-the-art equipment. At the end of the program, all participants gather for a national research convocation on nanotechnology, where each student presents the results of his or her summer work. Participants receive a \$3,800 stipend plus housing and all travel expenses to their research site and the convocation site.

Throughout Cornell, there is an expectation that undergraduate students will engage directly in the research enterprise. Cornell believes that teaching that is informed by research is better teaching. Students who study with faculty members who are actively engaged in research, and in many cases who participate in research as undergraduates, will develop a better understanding of the constitution of knowledge. Part of the work of a research university is to develop in its students the habits of critical inquiry and responsible scholarship. This will allow them to contribute effectively in their future lives at work, at home, and in society, regardless of their particular vocations.

Cornell undergraduates are involved in research efforts at an accelerating pace. A recent survey of the faculty showed that half of all responding faculty are engaged with undergraduates in either a faculty-led research project or a student-led research project, or both. A perfect example of this is the Mars Rover mission project in which sophomore Alex Hayes '03 worked under the guidance of Steve Squyres '78, PhD '81 to resolve a problem with the Rover's camera orientation and integration.

Programs such as the Cornell Presidential Research Scholars program support undergraduate involvement in research. This program provides undergraduates demonstrating superior academic potential and intellectual curiosity significant research support over four years. Open to students across all academic disciplines in all seven undergraduate colleges, CPRS enables its students to collaborate with faculty mentors of their choosing in designing and planning an individualized program of research—a degree of collaboration usually unheard of in the undergraduate experience. Magnifying the power of this dynamic student-faculty partnership, CPRS provides each scholar with a generous \$8,000 research support account and annual need-based loan replacement of up to \$4,000. Additionally, scholars can conduct research outside of their own college or major using any of the university's resources. Scholars can choose faculty mentors from any college and major regardless of their own affiliation.

Another program that supports undergraduate research is the Hughes Scholars program, a ten-week summer program in which promising undergraduate students work on faculty-mentored research. The program was initiated to increase undergraduate research opportunities in biochemistry, genetics, cell physiology, and neurobiology. Also providing support for undergraduate research is the Cornell Undergraduate Research Board (CURB). Dedicated to enhancing the Cornell University undergraduate research experience, CURB helps undergraduates locate and become involved in research projects and puts on an annual symposium where undergraduates present their research.

Cutting-edge research is becoming increasingly interdisciplinary as well as international in scope. To support Cornell's growing international presence, Cornell recently created the role of vice provost for international relations. The role was created to strengthen support for collaborative

research with an international perspective, to build partnerships with international universities of strategic importance to Cornell, and to support international experiences for Cornell students. David Wippman, a professor of law who spent a year as director of multilateral and humanitarian affairs at the National Security Council in 1998-99, was appointed to the role in 2004.

## **OTHER PRIORITIES**

### **Improving Faculty and Staff Compensation**

At the heart of any great university is the strength and diversity of its faculty. Sustaining the strength of the Cornell faculty and a culture of aspiration is critical for Cornell to reach its institutional goals. Faculty hiring through the next decade will be the most important since the 1960s and will in considerable measure define the intellectual character of this university. On the Ithaca campus, Cornell anticipates hiring between 600 and 750 faculty in the next decade, almost half the number of the current faculty. This hiring will occur at a time of significant growth in the technological and biological sciences, and of intense competition for the very best faculty across every field. Cornell believes that it must position itself for increasingly rigorous competition if it is to be successful in attracting and retaining the best academic scholars.

Since 2001, the university has committed resources to enhance faculty and staff compensation as part of a multi-year salary improvement program designed to make Cornell's salaries competitive with those of peer institutions. For faculty salaries, the Faculty Senate, the academic deans, and the administration agreed in 1999 to define two sets of peer reference groups (one for endowed Ithaca faculty and one for contract college faculty) against which salary improvement would be measured. The goal was to raise Cornell's faculty salaries to the average of peer groups within a five- to six-year period. The university has made great progress in this regard and expects to reach its goals by the end of 2005-06. A separate goal, stated in terms of external market averages, was set for staff salaries. Progress is being made on this front as well. Cornell remains committed to offering its faculty and staff competitive salaries, benefits, and facilities.

### **Increasing the Information Technology Capabilities for Faculty, Students, and Staff**

Cornell has invested considerable effort and funding into information technology for both academic and administrative purposes. The Ithaca campus has launched a project to update the communications wiring infrastructure in buildings throughout the Ithaca campus, a project that is expected to take over twelve years and cost \$68 million. The updating of administrative systems remains a priority, and \$50 million has been made available to enhance technological capabilities. The administration has developed a multi-year integrated plan to implement new administrative systems for student and financial data and processes.

### **Enhancing Diversity within and among Cornell's Faculty, Staff, and Students**

For a generation, Cornell has paid consistent attention to becoming a more reliably diverse and welcoming community. The university recognizes the importance of systematic and concerted efforts to increase diversity among faculty, staff, and students and the need to create an environment in which differences are appreciated. It has made measurable progress recruiting undergraduates, graduates, faculty, and staff from underrepresented groups. It has both attracted and retained a more diverse population, gaining incrementally in racial, cultural, and gender diversity.

Success has come through persistence and widely varied programming: the aggressive recruitment of underrepresented minority high school students; improvements in the campus environment, including support services for students of color, other underrepresented groups, and women; efforts to strengthen the faculty and curricula in ethnic studies; increased

recruitment of minority graduate students; special programs to encourage advanced degrees; and fellowships and faculty bridge funds that encourage the recruitment of a more diverse faculty. Cornell has also been active in creating K-12 programs designed to enhance the education of underrepresented minority children, especially in science and math. In fall 2004, the number of underrepresented minority students in Cornell's entering class increased from 375 to 415 without any decline in selectivity. Cornell hopes that continued success in developing the applicant pool and recruiting admitted students will produce further gains in future years. The 2004-05 academic year also saw modest increases in the percentages of women and minority group members in the faculty. Over the last decade the number of women faculty members has grown from 296 to 383, an increase of 29.4 percent, and the percentage of women faculty members has increased from 18.7 percent to 24.3 percent of total faculty. Over the past decade, the number of minority faculty members has expanded from 153 to 208, and the percentage of minority faculty members has grown from 9.7 percent to 13.2 percent of total faculty. For staff, this past year women filled 3,767 nonacademic full-time positions (56.9 percent of the total). Minority individuals filled 466 nonacademic full-time positions (7.03 percent). Cornell also has conducted a gender-equity salary study and continues to improve university-wide coordination to facilitate dual career spousal/partner appointments (through the Dual Career Office in the Recruitment and Employment Center of the Office of Human Resources). Cornell has committed to expand these efforts and achieve better coordination among them.

The university has created a bias response protocol and developed a number of innovative programs to increase diversity, raise diversity topics within the Cornell community, and foster a better understanding of cross-cultural issues. One of these programs is called "One Vision, Many Voices." This diversity-education initiative began in fall 2002 with a goal to facilitate discussion among students about issues of diversity and expectations of inclusiveness. The cornerstone of the initiative is theatrical performances by CITE (the Cornell Interactive Theatre Ensemble) and facilitated discussions by staff and faculty wherein which top Cornell administrators provide closing remarks. Each new Cornell student is required to attend. Twelve open discussion groups help continue discussions of diversity on campus, as well as a six-week diversity training session for students interested in further broadening their horizons. "One Vision, Many Voices" is a collaborative effort of many units across campus, including the Office of the Vice Provost for Undergraduate Education, the Office of the Vice Provost for Diversity and Faculty Development, the Division of Student and Academic Services, the Office of the Dean of Students, CITE, and Campus Life Community Development.

In spring 2004, the Provost's Office launched the Cornell Alumni-Student Mentoring Program (CASMP), principally for underrepresented minority students in the Class of 2008. The Alumni-Student Mentoring Program seeks to improve Cornell's ability to both attract and graduate more underrepresented minority students by providing each student who wishes to participate in the program with an alumni mentor. Cornell's belief is that a close and continuous connection with alumni will help in the recruitment, retention, graduation, and overall success of these students. Students who choose to have a mentor will learn about coping with, and succeeding in, life at Cornell and beyond from alumni who themselves have shared that experience with all its challenges and promise. CASMP mentors serve as role models and are available to share information with a student on an array of topics ranging from insights regarding undergraduate life at Cornell to interviewing and networking skills. Mentors are asked to serve for the entire four-year undergraduate career of the students with whom they are matched. As the program develops and Cornell matches freshmen from subsequent classes, alumni mentors will have the option of being matched with from one to four students.

In fall 2004, the Provost's Office launched the Provost's Advisory Committee on Faculty Work Life. This committee was charged to examine the tenured and tenure-track faculty work life and

working climate, with a special emphasis on the experiences of women faculty. An extensive survey of the faculty was conducted in fall 2005 to inform further work in this area.

President Rawlings recently announced a priority of producing a “clearer, more strategic” plan for diversity, which will better communicate the many efforts on campus.

The university seeks to improve its record: to build a more diverse community of students, faculty, and staff; to add strength to the academic study of ethnic and gender issues; and to make the campuses richer in their cultural appeal.

### **Fortifying Cornell's Long-Term Relationship with New York State and the State University of New York (SUNY)**

The university continues to work actively with members of the executive and legislative branches of state government and the SUNY leadership to ensure that Cornell is viewed as a full partner in the state's higher education enterprise and is treated fairly in the apportionment of educational resources.

SUNY's standard resource allocation methodology does not fit well for Cornell given Cornell's land-grant mission, unique within the SUNY system, and the fact that the endowed colleges provide a significant number of first- and second-year courses for contract college students. Cornell is working with SUNY and the New York State Division of Budget to ensure that state funding mechanisms adequately support Cornell's unique situation.

### **Maintaining Broad Student Access to a Cornell Education**

Cornell has a long history of providing financial aid to undergraduates. The first gift-funded student aid came in the form of merit-based prizes. Andrew D. White initiated the concept at Cornell in February 1868 when he offered the university \$1,000 “to be applied to the support and encouragement of meritorious students.” As early as 1879, the university established free scholarships that were to be awarded based on an assessment of financial need and meritorious academic conduct. Amos Padgham created the first endowed scholarship fund in 1892, initiating a trend to create financial aid endowments that would remain productive and available far into the future.

Whether viewed as bona fide costs or tuition discounts, these investments have real fiscal impacts. Financial aid budgets are often increased at or above the growth in tuition rates. For example, Cornell-funded undergraduate grant aid grew 10 percent from 2001–02 to 2002–03 while Cornell's three primary undergraduate tuition rates increased a weighted average of 6.4 percent.

Cornell strives to be sure that eligible students have access to the university's programs by committing over \$160 million of its own resources annually for student financial aid and assistance. About 48 percent of all undergraduates demonstrate some financial need, and about 39 percent are awarded subsidized loans, work-study opportunities, and grant aid (the other 9 percent receive loans and work-study but no grant aid). Of the \$160 million Cornell spent on undergraduate financial aid in 2004–05, 93 percent provided grant aid to about 5,500 students.

Cornell's undergraduate admissions and financial aid policies seek to ensure access without regard to ability to pay, and Cornell continues to package financial aid to improve diversity and student quality. Currently, Cornell operates under a policy whereby U.S. citizens and permanent residents are admitted regardless of their ability to pay the cost of attendance and then are assisted in meeting that cost upon enrollment. Residents of Canada and Mexico are included under the umbrella of “U.S. citizens and permanent residents.” Financial aid for international

students (other than those from Canada and Mexico) is handled differently, based on a predetermined allocation of resources.

**Cornell Admissions/Financial Aid Policy**

Cornell University makes admissions decisions without regard to the ability of students or parents to pay educational costs. Students who are U.S. citizens or permanent residents and who demonstrate financial need will be assisted in meeting that need through one or more of the following: federal and state grants, employment opportunities, loans, The Cornell Commitment programs, scholarships from endowments and restricted funds, and Cornell grants. Annual adjustments will be made in self-help and family contribution levels.

Cornell will continue its commitment to excellence and diversity in the student population. Self-help levels for individual students may reflect the University's recognition of outstanding merit, unique talent, commitment to work and community service, and its commitment to diversity in the class.

--Adopted by the Cornell University Board of Trustees  
March 1998

Financial aid awards are based on an assessment of financial need using the College Scholarship Service need analysis. Recently, Cornell adopted the "consensus approach," which changed the treatment of student and family assets (such as a family residence) in a way that is more favorable to middle-income families.

## **CHALLENGES AND OPPORTUNITIES FOR THE WEILL CORNELL MEDICAL COLLEGE**

Weill Cornell Medical College including the Weill Cornell Graduate School, has a superb ten-year record of institution-wide strategic planning and implementation. In the past ten years, the Medical College has developed two strategic plans (Strategic Plans I and II) is currently in the process of developing a third.

Strategic Plan I focused primarily on research and education, resulting in an investment in new problem-based curriculum, teaching laboratories, recruitment of young investigators, establishment of fourteen new research cores, recruitment of four new basic science chairs, construction and renovation of new labs as well as acquisition of new housing units. Strategic Plan II focused on important investments in clinical and translational faculty recruitment. As part of Strategic Plan II, the College is constructing an Ambulatory Care and Medical Education building, set to open in late 2006, where faculty can conduct their practices and see outpatients participating in clinical research projects. The building includes a state of the art Computational Biology Center for the College as well as a Clinical Skills Center for teaching and evaluating medical students by using standardized patients, a recently adopted requirement of the Liaison Committee on Medical Education.

In 2004, the Medical College began to develop Strategic Plan III. The approach, while similar to the previous two plans is unique in that the entire institution and its missions are under review. There are five faculty workgroups, one each for research, clinical care, education, graduate school and support services and campus life. After each workgroup has completed its recommendations, senior leadership will review and prioritize those recommendations it deems most important for the future. Planning and finance staff will prepare capital and operating

budgets for these recommendations. Finally, finance staff will determine financial feasibility for the Plan. The Strategic Plan Steering Committee, which includes Overseers and senior faculty, will receive the recommendations, consider them and forward them to the Medical College Board of Overseers for formal approval. This process includes more than 75 faculty, Board members, and administrators. Workgroup recommendations are expected to be complete by the summer of 2006 for consideration by the Board and development of funding strategies and implementation plans.

In response to a request from the Middle States Commission that this Periodic Review Report contain an update on the status of the Weill Cornell Medical College in Qatar, recently added as an additional location, and the status of the development of the teaching hospital and clinical training opportunities there, the following is included:

The overall status of the Weill Cornell Medical College in Qatar remains unchanged, as there have not been any changes since the Substantive Change Report filed in January 2006. With respect to the development of the Specialty Teaching Hospital (STH), the Clinical and Operational Planning Program for the Hospital has now been completed. A U.S. firm, Ellerbe Becket Inc., has been chosen as the executive architect for the project. Construction of the STH should commence in 2007 with commissioning in 2010. Searches for the Project Director have commenced. Regarding the clinical training opportunities for students, extensive planning continues with the Hamad Medical Corporation (HMC) for the launch of the first clinical clerkships at HMC in July 2006.

## CHAPTER FOUR: ENROLLMENT AND FINANCE TRENDS AND PROJECTIONS

### APPENDICES FOR THIS CHAPTER AS REQUESTED BY MIDDLE STATES:

2004-2005 AUDITED FINANCIAL STATEMENTS AND MANAGEMENT LETTERS

2003-2004 AUDITED FINANCIAL STATEMENTS AND MANAGEMENT LETTERS

### FINANCIAL OVERVIEW

Cornell consists of two major fiscal units: the Ithaca campus operation, which includes the endowed colleges, the contract colleges, the central university administration, and the enterprise and service operations for the Ithaca campus, and the Weill-Cornell Medical College in New York City and Doha, Qatar. The university operates these fiscal units as self-supporting entities (fund balances relating to one of the units are generally not available to the other unit), although the only legal limitations pertain to certain donor-restricted funds and funds of the contract colleges. Specifically, the laws establishing the contract colleges at Ithaca prohibit the use of funds attributable to those colleges by other segments of the university. In addition to the two major fiscal units, eight subsidiary corporations are included in the financial statements. All significant intercompany transactions and balances are eliminated in the financial statements.

Cornell's budget is approved by the Board of Trustees in May of each year and is developed through the following process. *Ithaca campus operations:* All units set basic priorities and income estimates in the fall that are then reviewed and refined and become the basis for the development of unit budget plans in the spring. The state funds portion of the budget for the contract colleges is dependent upon the preparation of the budget for the State. This budget development process for the contract colleges begins in late spring with preliminary requests that are reviewed with SUNY and culminates with the adoption of the State budget for the following State fiscal year (April 1 - March 31). *Medical College operations:* The Medical College budget must first be approved by the Board of Overseers of the Medical College before becoming ratified by the Board of Trustees. *Capital Budgeting:* The capital budget process, through which the university individually considers and approves the priorities, costs, and financing of all capital projects, includes other development of a rolling five year capital plan approved by the Board of Trustees each May.

### ENROLLMENT TRENDS

The following table sets forth (a) the number of applications received for admission for full-time freshman enrollment, (b) the number of those applicants accepted, (c) the ratio of acceptances to total applicants, (d) the number of such successful applicants who declared their intentions to enroll and (e) the ratio of entering students to acceptances.

**Full Time First-Year Student (Freshman) Admission Rates**

<b>Fall</b>	<b>Total Applications</b>	<b>Acceptances</b>	<b>Acceptance Rate</b>	<b>Declared Intent to Enroll</b>	<b>Yield</b>
2001	21,519	5,861	27.2%	2,986	51.9%
2002	21,502	6,133	28.5%	3,064	50.0%
2003	20,441	6,334	31.0%	3,202	50.6%
2004	20,822	6,130	29.4%	3,093	50.5%
2005	24,452	6,621	27.1%	3,108	46.9%

The quality of applicants, as measured by class rank and entrance examination scores, is consistently high. The following table sets forth the percentage of Cornell's entering freshmen achieving a score of 600 or greater on each component of the Scholastic Aptitude Test ("SAT") for the past five years. For the most recent class, entering in fall 2005, 84% scored over 600 on the verbal component and 92% scored over 600 on the math component.

#### Percentage of Entering Freshman Scoring 600+ on SAT

	<u>Fall</u>	<u>Verbal</u>	<u>Math</u>
2001		85	92
2002		85	92
2003		85	91
2004		88	94
2005		84	92

The following table sets forth enrollment in the Graduate School since fall 2001.

#### Graduate School Enrollment\*

<u>Fall</u>	<u>Endowed Division</u>	<u>Contract Division</u>	<u>Total Enrollment</u>
2001	2,665	1,447	4,112
2002	2,821	1,467	4,288
2003	2,930	1,466	4,396
2004	2,859	1,454	4,313
2005	2,886	1,410	4,296

\*Data is as of the sixth week of classes.

The following table sets forth enrollment for professional degrees and for the Medical College since fall 2001.

#### Enrollment in Professional Degrees and Medical College

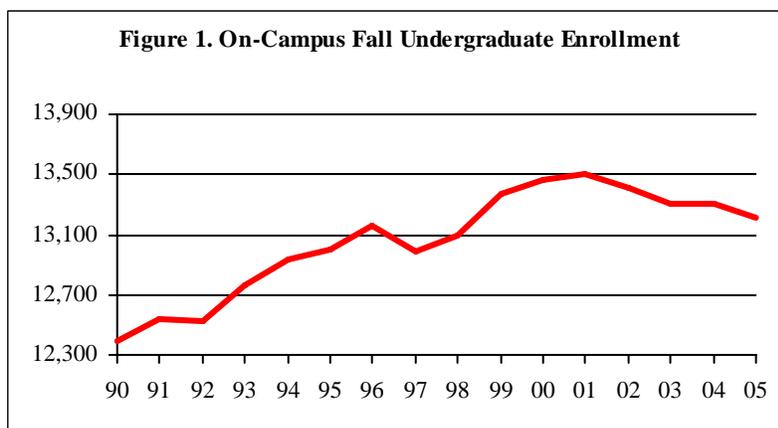
<u>Fall</u>	<u>Johnson School (MBA)</u>	<u>Law School (JD)</u>	<u>Veterinary Medicine (DVM)</u>	<u>Medical College (MD)</u>	<u>Grad School of Medicinal Sciences (MS/PhD)</u>
2001	643	543	321	398	323
2002	664	568	330	416	246
2003	653	584	332	412	302
2004	655	589	336	414	320
2005	732	569	335	428	341

The following enrollment summary table includes enrollment figures for the undergraduate, graduate and professional programs in Ithaca, and for the Medical College in New York City and Qatar. For the year 2005, the numbers below do not include a number of students Cornell accepted on an exceptional basis who were displaced by Hurricane Katrina.

**Enrollment Summary**

Fall	Undergraduate	Graduate/ Professional	Total Enrollment
2001	13,801	6,340	20,141
2002	13,725	6,512	20,237
2003	13,655	6,679	20,334
2004	13,625	6,628	20,254
2005	13,515	6,701	20,216

Figure 1 displays the trends in enrollment of on-campus students only (this number does not include undergraduates who were off-campus participants or who were employee degree participants). The chart indicates that on-campus undergraduate enrollment increased by 6 percent, or 819 students, between fall 1990 and fall 2005 (from 12,389 in fall 1990 to 13,208 in fall 2005). Slightly more than a third of this increase (393 students) occurred between fall 1998 and fall 1999. The chart shows the success in decreasing the operational maximum total on-campus undergraduate enrollment down to 13,000 students starting in fall 2001.



**ENROLLMENT PROJECTIONS**

**Undergraduate Students**

As part of a continuing emphasis to enhance the selectivity of Cornell’s undergraduate student population and curtail growth in order to stabilize overall enrollment, Cornell implemented an aggressive strategic first-year freshman enrollment plan in fall 2001.

The purpose of the plan was to:

- Manage toward a longer-term, university-wide, undergraduate enrollment target of 3,000 fall first-time freshmen.

- Protect individual colleges from under-enrollment as they adjust admissions strategies to yield their targeted number of incoming fall first-time freshmen.
- Advise and assist colleges from enrolling more than their targeted number of students.

Given the history of regularly over-enrolling the freshman class and the need for disciplined enrollment targets with the new North Campus residential initiative, the above plan was initially presented in fall 2000 to each of the undergraduate colleges. Full implementation began in fall 2001. After implementation, the plan was reviewed and revisions were initiated starting with the fall 2003 term. These included increasing the undergraduate enrollment target by 50 students to 3,050 fall first-time freshmen and eliminating all January first-time freshmen.

Maintaining a stable total undergraduate enrollment is imperative as Cornell continues to enhance the undergraduate experience. With the opening of the North Campus residential initiative and increased emphasis on the total undergraduate experience, there is a greater need to be more disciplined about all aspects of enrollment targets. Managing toward the 3,050 target has been possible because of the implementation of the undergraduate enrollment management guidelines.

A key element of the first-year freshmen enrollment plan was the construction of a conservative admit and yield model and the aggressive use of the waitlist. Students admitted from the waitlist are just as strong as students admitted through regular and early decision based on standard, quantifiable measures. Contrary to conventional wisdom, there is no dramatic drop-off in academic quality when colleges admit from the waitlist. For an institution like Cornell, this is especially significant because Cornell has such a large and strong applicant pool.

For fall 2005, implementation of the guidelines was a tremendous success as evidenced by the size and quality of the first-year freshman class. The seven undergraduate colleges continued to refine their independent admissions processes to achieve a university first-time freshmen enrollment target of 3,050 students. Success was claimed with 3,076 first-time freshmen enrolling for fall 2005 as of the sixth week of classes.

Undergraduate enrollments at Cornell remain strong. The institution is in the enviable position of having a large applicant pool making it possible to admit and matriculate a diverse and extremely well qualified student body.

### **Graduate Students**

Graduate student enrollment is projected within each field of graduate study at Cornell. Graduate students are enrolled only as funding allows and thus the enrollment numbers are constrained or grow in response to current resources including facilities space. Additionally, because research funds support a number of Cornell's graduate students, as research activity increases or decreases, the number of graduate students involved in that research respond in step.

The professional schools, which include the Johnson School of Management, the Law School, the College of Veterinary Medicine, and the Weill Medical Colleges in New York City and in Qatar, set enrollment targets internally, limited by the number of faculty, amount of facilities space, and number of students in previous classes.

The Johnson School's enrollment numbers for the MBA degree have grown substantially over the last ten years (542 in 1995 to 732 in 2005). This is because the School has attracted a new set of students by offering the MBA in an Executive MBA format. The Johnson School utilizes a

rigorous, annual enrollment projection process to ensure adequate resource allocation and controlled growth.

## **FINANCIAL RESULTS**

### **Assets, Liabilities, and Fund Balances**

Since June 30, 2005, there has been no material adverse change in the financial position or results of operations of the university. In the 2005-06 fiscal year, the university continues to pursue and expects to balance its budget while maintaining the quality of its academic programs, research, and outreach efforts.

Cornell's wealth, as measured by its net worth, continued to grow in the fiscal year ended June 30, 2005. Net assets increased by \$390 million, or 7.1 percent although the growth was somewhat less than the 9.5 percent growth achieved in the prior fiscal year. Total assets at June 30, 2005 were \$7.4 billion, a one-year increase of \$459 million, or 6.6 percent. Total liabilities increased by \$69 million, or 4.6 percent. With assets growing faster than liabilities, Cornell's financial results continue to reflect the strength of an institution capable of carrying out its mission while undertaking new initiatives.

Cornell continued to enhance plant and equipment during fiscal year 2004-05. The year's activity resulted in gross additions of almost \$224 million, primarily capital investments in new buildings, equipment, and principal payments on outstanding debt. Deductions for depreciation and disposals were \$139 million. Funding for the construction of parts of the West Campus Residential Initiative (The Alice H. Cook House and The Carl L. Becker House) and an addition to the School of Hotel Administration was drawn from contributions that had been received for these purposes. Net assets in financial capital increased by nearly \$546 million, due primarily to the investment of department and college "operating reserves" and good investment performance. Financial capital realized gains were nearly \$310 million and unrealized gains were \$19 million.

### **Operating Revenues and Expenses**

The performance result for unrestricted general operations, which aggregates the activities of the primary and supporting missions of the university, shows a decrease in net assets of \$182 million. This decrease is the result of a transfer of funds from General Operations to Financial Capital and is not a direct result of a decrease in operations for 2004-05. The transfers reflect a concerted effort to invest department and college "operating reserves" that had been accumulated from both current and prior year's activities. These balances, approximately \$195 million, were moved into the Long-Term Investment Pool (LTIP), which added to the endowment and similar funds, increasing the future asset base of the university. In addition to the decrease in unrestricted net assets for general operations, restricted net assets used for general operations declined by \$58 million, essentially the result of higher utilization of donor-restricted funds for program activities.

Although the overall growth in revenue of \$36 million from the prior year, or 1.5 percent, from \$2.510 billion to \$2.546 billion, was not remarkable, the underlying variances in the different types of revenue exemplify how the university's diverse revenue sources protect its ongoing operations. Net tuition and fees; federal, state and private grants and contracts; the Medical Physicians' Organization; and other sources of revenue (primarily management fees for the WMC-Qatar) all grew reasonably. This growth allowed us to absorb decreases in contributions and investment income (comprised of interest and dividends, and realized and unrealized gains).

There was modest growth in expenses from the prior year of \$124 million, or 6.1 percent, from \$2.032 billion to \$2.156 billion. Supplies and general expense increased \$37 million, or 9.6 percent.

Much of the increases in this category are in student aid, subcontracts, contractual allowances on patient's receivables, and repairs and maintenance.

### Endowment

As of June 30, 2005 Cornell's endowment and funds functioning as endowment, not including life income funds, had a market value of approximately \$3.860 billion. Such amounts include approximately \$1.216 billion of funds functioning as endowment. Both the income and principal of funds functioning as endowment are expendable. Approximately \$1.118 billion of the \$1.216 billion is unrestricted as to use.

The following is a five-year summary of the endowment and similar funds net asset balances for all divisions of the University. Living trust funds are excluded since the income from living trusts is payable to one or more beneficiaries during their lifetime, and is not available to Cornell. On the termination of life interests, the principal becomes available for University purposes, and may be restricted as to use by the donor.

#### Market Value of Endowment and Similar Funds (in millions)

June 30	True Endowment and Related Appreciation	Funds Functioning as Endowment	Funds Held in Trust	Total Endowment and Similar Funds
2001	\$2,188.1	\$905.5	\$116.8	\$3,201.4
2002	\$1,994.8	\$791.5	\$133.9	\$2,920.2
2003	\$1,951.4	\$817.4	\$145.8	\$2,914.6
2004	\$2,222.3	\$944.8	\$147.1	\$3,314.2
2005	\$2,508.3	\$1,215.9	\$135.4	\$3,859.6

### Investment Policy

The university's investment policy for the Long Term Investment Pool (LTIP) is to manage a balanced fund using external managers for domestic and international equity, commodities, and fixed income, and various partnerships for hedge funds, real estate and private equity. The assets are managed to maximize total return subject to risk constraints. Shareholders are paid an annual dividend based on a payout policy approved by the Trustees. Assets in the Pooled Balances Investment Fund (PBIF) are invested in the same manner as those in the LTIP, with a payout managed by the University Budget Office as directed by the President.

The Investment Committee of the Board oversees the investment of the LTIP and the PBIF funds, including the selection of external investment managers, the allocation of investments among managers and any restrictions on the amounts of funds in any type of investment. As of June 30, 2005, approximately 44% of the LTIP was invested in equity securities, 5% in commodities, 10% in fixed income investments, and 41% was invested in hedge funds, real estate and private equity partnerships.

## FINANCIAL PROJECTIONS

### Operating Projections

Operating revenue is expected to grow 5.5 percent for the Ithaca campus in 2006-07 and 6.7 percent for the Joan and Sanford I. Weill Medical College and Graduate School of Medical Sciences (including the campus in Doha, Qatar). Overall, revenues are planned to increase 5.9

percent from the current-year forecast, to \$2.618 billion, and expenditures to increase 5.8 percent, to \$2.574 billion. The \$12.1 million net difference after transfers will be added to current fund balances and operating reserves. The capital plan, which addresses Cornell's most important facility needs, shows estimated expenditures of \$422.7 million for approved projects in 2006-07. The 2006-07 Operating and Capital Financial Plan publication is included with the report for reference (see Appendix E).

### Financial Indicators and Ratios

One ratio Cornell utilizes to assess the strategic use of debt is the Debt Service Coverage ratio (adjusted change in net assets divided by the annual debt service including both principal and interest payments). This measures whether the university has sufficient net income stream to meet its debt burden if economic conditions changed.

#### Debt Service Coverage Ratio For the Five Years Ended June 30, 2005 In \$1000s

	2005	2004	2003	2002	2001
<b>Adjusted Change in Net Assets:</b>					
Change in Unrestricted Net Assets					
General Operations	(\$182,443)	\$15,651	\$27,536	\$25,230	\$22,358
Physical Capital	\$117,338	\$89,284	\$22,909	\$62,093	\$10,980
Financial Capital	\$437,484	\$283,080	(\$84,284)	(\$395,712)	(\$303,541)
Change in Unrestricted Net Assets	\$372,379	\$388,015	(\$33,839)	(\$308,389)	(\$270,203)
ADD: Interest Expense	\$24,138	\$21,247	\$21,999	\$23,088	\$27,629
ADD: Depreciation	\$137,159	\$136,414	\$123,261	\$120,329	\$136,414
<b>Adjusted Change in Net Assets</b>	<b>\$533,676</b>	<b>\$545,676</b>	<b>\$111,421</b>	<b>(\$164,972)</b>	<b>(\$106,160)</b>
<b>Debt Service:</b>					
Interest Expense	\$24,138	\$21,247	\$21,999	\$23,088	\$27,629
Principal Payments	\$81,973	\$26,851	\$25,146	\$90,597	\$29,084
<b>Debt Service</b>	<b>\$106,111</b>	<b>\$48,098</b>	<b>\$47,145</b>	<b>\$113,685</b>	<b>\$56,713</b>
<b>Debt Service Coverage Ratio</b>	<b>5.03</b>	<b>11.35</b>	<b>2.36</b>	<b>(1.45)</b>	<b>(1.87)</b>

The Primary Reserve Ratio (calculated by dividing *Expendable Net Assets* by *Total Expenses*) indicated how long the university could function using its expendable reserves without relying on additional net assets from operations. Cornell believes, that viewed over a period of years, this ratio is a good indicator of overall trend of institutional wealth and answers the question of whether the university has been able to retain expendable resources at the same growth rate as its expenses.

For private institutions, Expendable Net Assets includes all unrestricted and temporarily restricted net assets, excluding net investment in plant and those temporarily restricted net assets that will be invested in plant.

**Primary Reserve Ratio**  
**For the Five Years Ended June 30, 2005**  
**in \$1000s**

	2005	2004	2003	2002	2001
<b>Expendable Net Assets:</b>					
General Operations - UR and TR	\$438,666	\$679,046	\$674,092	\$658,843	\$587,624
Physical Capital - UR and TR	\$1,457,539	\$1,373,098	\$1,298,924	\$1,306,613	\$1,217,925
Financial Capital - UR and TR	\$2,520,390	\$2,077,330	\$1,779,146	\$1,846,558	\$2,227,099
Less:					
Net Investment In Plant	(\$1,071,459)	(\$1,013,003)	(\$956,311)	(\$923,075)	(\$872,258)
TR Net Assets for Physical Capital	(\$138,947)	(\$171,844)	(\$186,954)	(\$217,552)	(\$190,957)
<b>Expendable Net Assets</b>	<b>\$3,206,189</b>	<b>\$2,944,627</b>	<b>\$2,608,897</b>	<b>\$2,671,387</b>	<b>\$2,969,433</b>
<b>Total Expenses</b>	<b>\$2,156,248</b>	<b>\$2,032,460</b>	<b>\$1,900,642</b>	<b>\$1,776,374</b>	<b>\$1,618,387</b>
<b>Primary Reserve Ratio</b>	<b>1.49</b>	<b>1.45</b>	<b>1.37</b>	<b>1.50</b>	<b>1.83</b>

UR = Unrestricted  
TR = Temporarily Restricted

### Fiscal Planning

Cornell is committed to a long-term, balanced operating budget and conducts five and ten-year planning efforts to forecast revenues and expenditures to this end. The current ten-year model is in the process of update to reflect the upcoming capital campaign. The campaign is anticipated to be launched in 2006-07.

## CHAPTER FIVE: ASSESSMENT PROCESSES AND PLANS

### CORNELL'S APPROACH TO STUDENT LEARNING

Cornell's founding mission, to create "an institution where any person can find instruction in any study," serves as a critical underpinning to its approach to student outcomes assessment. Cornell is known for its ability to support individualized pathways to knowledge. As its mission implies, Cornell also has a strong history of opening its doors to "any" student and is advantaged by the diversity of backgrounds and perspectives of its student body. These two elements have a compound effect, producing a multitude of unique, personal educational experiences for its students.

At the undergraduate level, Cornell offers more than 70 formal major fields as well as challenging dual-degree programs and a score of interdisciplinary majors that cross traditional department boundaries. Within the 70 major fields, there are often differing pathways of learning. For instance, the Animal Science major contains the following eight pathways: Dairy Cattle Management, Genetics, Growth and Development, International Agriculture, Livestock/Poultry Management, Animal Nutrition, Physiology, and Pre-Veterinary. Students taking the same core courses in Animal Science will often be on different educational paths. While gaining a basic understanding of the topic may be helpful to all the students enrolled in a course, some students will emphasize some sub-topics more than others because of their individual interests and educational focuses. This academic complexity poses special challenges for any effort to assess student learning.

Although Cornell includes professionally focused educational opportunities for undergraduates, such as the renowned School of Hotel Administration, Cornell is not focused principally on providing strictly vocational or technical preparation for specific careers. Rather, the seven undergraduate colleges and schools, each with very different orientations, all subscribe to the value for their students of a broad grounding in the basic liberal arts. They share the belief that this grounding helps students think logically, communicate effectively, and examine critically their own and others' ideas. Consequently, the curriculum of the College of Arts and Sciences is richly represented in the courses taken both as requirements and as electives by all Cornell undergraduates. If one excludes the students registered in the College of Arts and Sciences, the average number of arts and sciences courses taken per year by Cornell's other undergraduates is three, or approximately one-third of an average course load. This liberal arts "hub" curriculum creates many of the common educational experiences that build community among Cornell's students, but each student's experience at Cornell is heavily determined by the specific requirements of his/her individual learning objectives.

The diversity of learning paths available to Cornell students, combined with Cornell's mission, makes Cornell's approach to student-learning assessment multifaceted. The academic complexity that defines learning at Cornell makes it unlikely that straightforward subject matter testing could directly measure the attainment of major institutional learning goals.

Key programmatic and pedagogical decisions are made within each college, and many times at the program level where the relevant expertise exists. Colleges, programs, and individual faculty members at Cornell have the freedom to make key decisions about student learning. This autonomy is granted under a cultural dictate of "freedom with responsibility." Cornell does not centrally mandate how this is to be accomplished. Instead, the institution sets forth shared educational values, principles, and goals, and uses a variety of measures to determine the extent to which student learning is occurring and is supported.

### **Principles for Assessing Student Learning**

Cornell believes that educational values should drive the assessment of student learning. Assessment is not an end in itself. Rather, it is a means of improving the educational experience and should be grounded in a vision comprising the kinds of learning Cornell values most. Outcomes are important, but equally important is understanding the experiences that lead to those outcomes so that resources can be properly applied to repeat or enhance future learning. Assessment is most successful when it is carried out in a variety of ways over time, not by monitoring a few key indicators episodically. The following key principles, adapted from the American Association for Higher Education Assessment Forum, describe Cornell's principles behind student-learning assessment:

- Learning is multidimensional, integrated, and revealed in performance over time, and assessment must take this into account.
- Clear, explicitly stated purposes and goals make assessment focused and useful.
- When representatives from across campus are involved, assessment builds community and fosters wider improvement.
- Educators meet their responsibilities to students and to the public through assessment.

### **Educational Values**

Cornell's educational values are diverse, but at the heart is the notion that students who are actively involved in constructing their educational experiences learn and grow the most. Cornell's founding mission was to be a university where any student can pursue any study. But Cornell's efforts to ensure student involvement in and ownership of their educational experiences go beyond simply offering a multitude of educational options and pathways. Central to Cornell's plan for student-learning assessment is ensuring that the university has created an effective learning environment that motivates students to be involved in their learning.

In Pascarella and Terenzini's compendium of the literature on college impact, *How College Affects Students*, they write, "One of the most unequivocal conclusions drawn from both our previous synthesis and the research during the 1990s is that the impact of college is largely determined by individual efforts and involvement in the academic, interpersonal, and extracurricular offerings on a campus. Students are not passive recipients of institutional efforts to 'educate' or 'change' them but rather bear major responsibility for any gains they derive from their postsecondary experience."<sup>i</sup>

By encouraging students to be involved in their learning, Cornell promotes a form of learning that is appropriate to high-ability students. Pascarella and Terenzini write, "Scholars no longer regard learning solely as an act of acquiring or absorbing a set of objectively verifiable facts and concepts and, subsequently, incorporating them into long-term memory. Instead they argue that a substantial amount of knowledge is actively constructed by the learner." In this constructivist approach to student learning, they continue, "...the learner does not just passively receive knowledge or 'truth' from others—that is, faculty members. Rather, students work actively and collaboratively with faculty members and student peers to create their own knowledge by trying to make personal sense out of the material that is presented to them."

Not surprisingly, studies show that students at institutions characterized by a strong "ethos of learning" show greater gains in learning and personal development than students at other institutions.<sup>ii</sup> Cornell believes that institutions should engender a strong ethos of learning where people are continually learning how to learn together. Walter Lippman describes this ethos as "the hospitality of the inquiring mind... one that invites ideas in, asks them to sit down, talks with them for a while, and makes them feel at home. They may leave, but there has been an

engagement.”<sup>iii</sup> The value of open engagement is foundational to Cornell’s culture. It has played a central role in the residential initiatives on North Campus and West Campus, and the resulting learning communities provide Cornell first-year students and sophomores with distinctive, academically supportive environments in which to pursue shared intellectual curiosity.

Cornell is a learning community where crossing traditional disciplinary boundaries is common and where constructing one’s own path of inquiry is encouraged and expected. By promoting a supportive culture for this, Cornell strives to ensure that students will successfully achieve its learning goals. Cornell promotes the following goals as the hallmarks of a Cornell education:

- An integrated living-learning environment.
- Teaching, mentoring, and advising by the best scholars.
- Opportunities for undergraduate research.
- Structured field-based learning and internship opportunities.
- International exposure.
- The quality of students with whom each student has an opportunity to live and work.
- Emphasis on civic engagement.
- Engagement with a diverse body of students, faculty, and staff.
- Focus on emotional wellness and intelligence.
- Structured opportunities for athletic competition and imaginative uses of leisure time
- A beautiful and exciting residential campus environment.

#### **CORNELL’S STUDENT-LEARNING GOALS**

Each college at Cornell defines its own specific student-learning goals that are appropriate and meaningful for that college, but the colleges’ goals reflect institutional commitments. At the institutional level, Cornell’s goals can be captured by broad learning categories, such as those suggested by George Kuh<sup>iv</sup>: cognitive complexity, knowledge acquisition and application, humanitarianism, interpersonal and intrapersonal competence, and practical competence. Cornell’s mission statement asserts, “Cornell is a learning community that seeks to serve society by educating the leaders of tomorrow and extending the frontiers of knowledge.” Strong development of these cognitive skills, among many others, is critical for students to reach the goal of becoming tomorrow’s leaders.

The goals within these categories are based on the colleges’ shared belief in the liberal arts tradition. These goals comprise an interrelated set of skills, traits, and areas of knowledge that takes into account the fact that students tend to change during their time at university, and that the changes concern not just what they learn but the kind of people they will become:

**Cognitive Complexity:**

Cognitive skills including reflective thought, critical thinking (e.g. ability to summarize information accurately and perceive logical coherences and discernable themes and patterns across different sources of information), quantitative reasoning, and intellectual flexibility (i.e. openness to new ideas and different points of view).

**Knowledge Acquisition and Application:**

Acquiring a strong foundation of knowledge in a student's chosen field of study; understanding knowledge from a range of disciplines and physical, geographic, economic, political, religious and cultural realities; and the ability to relate knowledge to daily life including using information presented in one class in other classes or other areas of life.

**Humanitarianism:**

An understanding and appreciation of human differences including an increased sensitivity to the needs of others; sense of civic responsibility and ethical awareness; global awareness.

**Interpersonal and Intrapersonal Competence:**

A coherent, integrated constellation of personal attributes (e.g. identity, self-esteem, confidence, integrity, appreciation for the aesthetic and spiritual qualities of life and the natural world) and skills (e.g. how to work with people different from oneself).

**Practical Competence:**

Skills reflecting an enhanced capacity to manage one's personal affairs (e.g. time management, decision making); to communicate effectively; to assess risk and plan appropriately; and to recognize opportunities especially those which may be interdisciplinary and innovative in nature.

Cornell alumni voice strongly that the education inherent in these institutional learning goals is important and that outcomes in these categories have proved critical in determining professional and personal success.

### **ATTAINMENT OF CORNELL'S STUDENT-LEARNING GOALS**

Cornell has established measures that promote the successful attainment of its student-learning goals at the institutional level, and also at the college, program, and course level, in both the academic and the nonacademic environment, including the residential experience. Direct and indirect measures are utilized not only to create a full picture about how much learning occurred but to better understand the factors behind the learning.

#### **Measuring Student-Learning Goals at the College and Program Level**

Cornell's institutional student-learning goals capture, at a broad level, the general values and aspirations that underlie the more specifically stated learning goals existing within each college. Each college has gone through a process of defining student-learning goals and plans regarding assessing learning in ways that are appropriate and meaningful for them. Similarities among the colleges include:

- Each college manages the academic experience for its students so that the subject matter is appropriate to build the expertise its students need to develop. Curriculum committees within the colleges, via a curriculum review process, are responsible for ensuring that Cornell is offering the best selection of high-quality courses to enable students to meet the learning goals of their undergraduate majors and areas of study within those majors. The committees also review the requirements for successful completion of courses.

In addition, the Cornell academic experience demands a sufficient breadth of learning to support the level of critical thinking that is the foundation of a liberal arts education. These curriculum committees establish and review all graduation requirements, including the distribution of credit requirements, which force students to diversify their studies.

- At the course level, all colleges employ direct measures of student learning, such as the use of instructor-assigned grades, exams, term papers, class discussion participation, and class projects.

These direct measures are most appropriate for measuring attainment in knowledge acquisition and application, and to a lesser degree, cognitive complexity. These traditional direct measures are utilized and managed by promoting high-quality teaching, such as through faculty hiring, promotion, and annual review. Cornell also assesses faculty quality via National Research Council (NRC) rankings of programs; an Academic Program Review process; federal, state, and foundation funding competition and associated peer review; success in recruiting and retaining additional faculty; and student satisfaction and success.

- All colleges use capstone projects for almost all honors students.

With rare exception, all honors students at Cornell are required to write a senior thesis or to complete an equivalent capstone project. This body of work serves as a direct measure of knowledge acquisition and application, as well as other goals such as cognitive complexity. At Cornell, a senior thesis is a capstone project that not only displays the degree of expertise learned, but also is a learning experience in itself, requiring the author to utilize and hone advanced skills such as integration, synthesis, and criticism. Additionally, some colleges offer capstone courses, such as the School of Hotel Administration, which offers a capstone course for seniors in strategy.

- Across all seven undergraduate colleges, almost all first-year students are required to take two writing seminars in the renowned program run by the Knight Institute at Cornell.

Writing across disciplines has played a critical role in Cornell's teaching mission. The effort, supported institution-wide by the John S. Knight Institute for Writing in the Disciplines, incorporates the teaching and use of writing as a way to promote learning in a broad spectrum of academic disciplines. Cornell has assigned the responsibility for the core writing requirement to the College of Arts and Sciences, which houses the Knight Institute. This is one way that the College of Arts and Sciences plays a central role in enhancing the general educational experience for virtually all Cornell students.

- Cornell directly measures attainment of some student-learning goals by tracking postgraduate scores on standardized tests.

For example, Cornell tracks scores on the LSAT and the MCAT. The mean score for seniors applying to law school for admission in fall 2004 was 160.1. Nationally, the mean score is 151, with a range from 120 (low) to 180 (high). MCAT averages for Cornell students who applied to enter medical school in 2004 were: Verbal Reasoning, 9.65; Physical Sciences, 10.10; and Biological Sciences, 10.36. The national mean on all numbered test scores is 8, with a range from 1 to 15.

- Cornell measures program strength in a multitude of ways. Cornell looks at statistics such as graduation rates and transfer rates between programs to assess the strength of individual programs. Student and alumni satisfaction surveys help measure indirectly the quality of programs at Cornell. Cornell also utilizes an Academic Program Review process, which is in its second decade of implementation. This process involves external review and a rigorous self-study review. Questions posed in the self-study include a statement of the goals of the undergraduate program, analysis of how teaching responsibilities are distributed and how graduate students contribute to teaching, and an evaluation of the extent to which the program matches the needs and career goals of the students.

Additionally, some programs and colleges undergo specialized accreditation processes beyond the Middle States Commission's process. This accreditation helps ensure that the information being taught is salient to the professions many of their graduates will pursue and that the educational experience is of a high quality. (See Appendix G.)

At the course level, course evaluations are utilized in a number of different ways across campus and are always available to a professor to help measure student learning and teaching effectiveness. Generally, teaching evaluations are utilized in annual promotion, salary, and teaching award decisions. Many colleges also have a mentorship program, pairing up senior professors with new faculty members, and use peer-review class visitations as well.

Although the colleges are similar in how they manage the academic experience for their students and how the institution helps the college to assess themselves, there is variation among the colleges in other assessments. This variation is appropriate given that the colleges have such different missions. The following three examples highlight the variation that exists among colleges in specific approaches to student-learning assessment.

#### The College of Arts and Sciences

The richness of the college's undergraduate curriculum is extraordinary; there is no course that all students must take, and there are nearly 2,000 from which they may choose. By choosing courses each semester, students design their own education. They develop known interests and explore new subjects. An education in the liberal arts and sciences means honing one's critical and imaginative capacities, learning about oneself in nature and culture, and gaining experience with views of the world radically unlike one's own. All this is highly individual, and the college relies on each student and his/her faculty adviser to design a sensible, challenging, and appropriate course of study.

Yet the college faculty believes that each student's education should have certain common qualities. These include familiarity with several different ways of knowing that are reflected in the various disciplines and fields of study. In addition to these general areas of knowledge, students acquire effective writing and quantitative skills, study foreign languages, achieve cultural breadth, and concentrate on one particular field through which they deepen their imaginative and critical thinking as fully as possible. To accomplish these objectives, the college has certain requirements for graduation. One is the distribution

requirement, which involves nine courses: four must involve science and quantitative reasoning and five must involve social science or history and the humanities or the arts. Additionally, there is a requirement of breadth—at least one course must emphasize an area or people from other than the United States, Canada, or Europe—and a requirement of temporal breadth—at least one course must focus on a period before the twentieth century.

The college's Career Services Center tracks statistics on graduate school acceptance rates and job placement as one indicator for measuring student learning. For instance, the Class of 2004 experiences an 85 percent acceptance rate to law schools (the national average acceptance rate is 56 percent) and a 77 percent acceptance rate to medical schools (the national average acceptance rate is 49 percent). The college also utilizes institutional surveys indicating student satisfaction rates to indirectly assess student learning.

### The College of Agriculture and Life Sciences

The College of Agriculture and Life Sciences has developed a list of educational gains—areas in which the college expects all students to have competency by graduation:

- The ability to understand and appreciate the complex biological, social, and physical interrelationships associated with the management of the earth's resources.
- The ability to write and speak effectively in the expression of disciplined thought.
- The ability to listen carefully and respectfully to the views of others, especially views with which we disagree.
- The ability to reason effectively in matters both quantitative and qualitative.
- The ability to access and make effective use of modern sources of information.
- The ability to evaluate and effectively interpret factual claims, theories, and assumptions in the natural sciences, the social sciences, and the humanities.
- The ability to communicate with people of different cultural perspectives.
- The ability to employ ethical reasoning in judging and acting on the moral implications of ideas and deeds.
- The ability to work both independently and in cooperation with others.
- The ability to evaluate priorities, and to set and achieve goals.
- The ability to integrate theory with practice.
- The ability and interest to pursue "lifelong learning."

In addition, the college requires a minimum of 39 credits in the college distribution requirements. These requirements assure that students have a breadth of education beyond their majors as well as competency in certain areas (physical and life sciences, social sciences, humanities, and written and oral expression). Within each group, many course options are available for students to fulfill the requirements. The college also requires all incoming students to take a math placement exam. Consequently, some students are required to take a pre-calculus course to assure competency in math.

The college is piloting peer evaluations for instructors and recently initiated the use of evaluations of teaching assistants by students. The college annually polls its graduates to determine what jobs or continuing educational activities they are involved in a few months after graduation to ensure that the goals behind the educational gains are appropriate and are being met. Additionally, data are collected regarding the percentages of students both who apply to medical and veterinary schools and who are accepted.

### The College of Engineering

The College of Engineering has defined overarching strategic objectives for the undergraduate educational experience and sub-objectives within each:

- Enhance the undergraduate educational environment and experience.
- Enhance the engineering undergraduate curriculum and implement procedures for assessment and change.
- Recruit the highest-quality undergraduate students.
- Become a leader in the education of women and underrepresented minority engineers.

Additionally, more specific educational outcomes, consistent with ABET (Accreditation Board for Engineering and Technology, the recognized U.S. accreditor of college and university programs in applied science, computing, engineering, and technology) criteria, were defined during the ABET accreditation review process:

- Ability to apply mathematics, science, and engineering principles.
- Ability to design and conduct experiments and analyze and interpret data.
- Ability to design a system, component, or process to meet desired needs.
- Ability to function on multidisciplinary teams.
- Ability to identify, formulate, and solve engineering problems.
- Understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- Understanding of the impact of engineering solutions in a global context.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

To ensure that the undergraduate curriculum fulfills these objectives, the college has a standing committee, the College Curriculum Governing Board (CCGB), that oversees the core course curriculum requirements of all engineering students in their first two years of study. Starting in the junior year, the departments are responsible for the upper-level major courses.

Six of the thirteen engineering majors are accredited by ABET. Driven by ABET outcomes-oriented requirements, each of the six accredited programs has a list of objectives (the knowledge and competencies students demonstrate two to three years after graduation) and a list of outcomes (the knowledge and skills students have at graduation).

Six of the college's majors went through the intensive two-year ABET accreditation process successfully in November 2004. The departments of ABET-accredited majors have their own direct and indirect, program-specific ways of evaluating success. These include samples of student work and exams, student surveys, alumni surveys, and other instruments.

The college uses alumni surveys, information from career placement, and current-student surveys to assess where it is and where it should go. The Engineering College Council, made up of influential industry and higher-education representatives who meet twice a year, provides a different kind of feedback. The college is just finishing a comprehensive study and survey of its undergraduates, and a committee has met all summer to discuss curriculum transformation.

The college also has a process for the continuous review and revision of engineering core courses. The College Curriculum Governing Board (CCGB) makes sure there are syllabets (ABET-required syllabi) for all the core courses. The syllabets include course learning outcomes. The CCGB also asks each instructor of a core course to develop a post-course assessment (every other year), which indicates how well each of the course outcomes have been met—as indicated by direct and indirect measuring tools—and what is being done to improve the course if necessary. Each of the ABET-accredited majors uses the same kind of syllabet and post-course assessment process for evaluating its upper-level courses.

Most majors require students to take a senior design course, which is considered the capstone project. This is not the case in majors like Computer Science; Operations Research and Engineering; and Information Science, Systems, and Technology. Most majors have an honors program that requires a written report equivalent to a senior honors thesis.

### **Measuring Student-Learning Goals and the Undergraduate Experience from an Institutional Perspective**

Cornell is involved in many centrally administered, institution-wide efforts to collect and evaluate data on the characteristics, experiences, and outcomes of its undergraduate students. Cornell has been directing more institutional resources and attention to ongoing institutional self-examination over the past decade. Since administering a survey of graduating seniors in 1994, Cornell has been engaged in a growing program of consortial, institution-wide survey research. Conducted by the Office of Institutional Research and Planning (IRP) and focused on students at various times during their undergraduate careers, these surveys form one of the main means by which the institution assesses the undergraduate experience. As the table below depicts, IRP now regularly solicits input and feedback from:

- freshmen as they are entering the university
- enrolled undergraduates
- seniors as they are about to graduate
- alumni five to ten years after graduation
- parents of enrolled students

### Schedule of Institution-Wide Undergraduate Survey Research at Cornell

Survey	Academic Year																
	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
<b>Freshman</b>								x	x	x	x	x	x	x	x	x	x
<b>Enrolled Student</b>						x		x		x		x		x		x	
<b>Senior</b>	x				x				x				x				x
<b>Alumni</b>							x					x					
<b>Parent</b>				x					x					x			

While the general perspective of questions shifts from asking freshmen about their expectations of college to asking alumni to reflect upon their undergraduate years in light of their post-baccalaureate experiences, the surveys typically examine the following common themes: academic experiences; extracurricular involvement; interaction with faculty in and outside class; interaction with other students; perceptions of academic and student support services and facilities; personal goals and values; and estimates of gains in knowledge and skills.

Cornell's student-assessment efforts have just recently matured to the point where IRP now has data from repeated administrations of surveys. Thus, a second, newer strategy for providing context for survey findings has been the inclusion of comparisons in Cornell students' survey responses over time. For the Senior Survey, Cornell can now display trends across responses from the Classes of 1994, 1998, and 2002. Showing peer comparisons and trend data, even for such a minimal number of time points, offers audiences a powerful point of reference. Cornell also is beginning a longitudinal analysis and is hopeful that this will result in more robust findings about its students and the learning environment.

The extracurricular environment plays a large role in the attainment of Cornell's student-learning goals such as humanitarianism, interpersonal and intrapersonal competence, and practical competence. Because these goals promote the development of complex capacities and skills rather than the simple mastery of subject matter, it is difficult to develop direct measures of their attainment.

Cornell makes effective and widespread use of indirect measures of student-learning goals, listed below.

- Post-graduation job placement, and medical and law school acceptances.
- Selective fellowships awarded to its students.
- Employers hiring the most Cornell graduates.
- Salary levels by college, geographic region, and employment sector.

These data help Cornell understand the extent to which its graduates are finding success in different types of arenas including the professional, scholarly, and corporate. These are generally arenas that require the package of skills inherent in Cornell's student-learning goals, so they are a valuable reflection of how Cornell is doing in ensuring that its students have achieved its student-learning goals.

Another indirect measure used at Cornell assesses factors in the learning environment. Cornell combines research on learning environments with data about what its constituents would like to see in that learning environment. Then Cornell measures to what extent it is providing this environment.

One example is student-faculty interaction. Scholars have emphasized that out-of-class contact between students and faculty significantly enhances the quality of the undergraduate experience. Indeed, empirical studies conducted over the past three decades document that out-of-class contact with faculty is associated with increases in students' quality of effort, persistence, academic achievement, intellectual and personal development, and evaluations of their college experience.

As mentioned in chapter 3, in February 2004, Cornell conducted a survey of faculty interaction with undergraduate students. The purpose of the study was to measure the nature and frequency of faculty members' out-of-class interactions with undergraduate students and the factors that support or inhibit these interactions. The survey, which had a 62 percent response rate, indicated that eight out of ten responding faculty were engaged in some role involving out-of-class interaction with undergraduates. Even excluding undergraduate advising roles, nearly three-quarters of all faculty members were involved in a university role that involved some interaction with undergraduates. The largest share of these roles was centered on research—half of all responding faculty are engaged with undergraduates in a faculty-led research project, a student-led research project, or both.

Another measurement used at Cornell derives from an analysis of the Cooperative Institutional Research Program (CIRP) freshman survey data that posited that diversity experiences such as attending a racial-cultural awareness workshop, discussing racial or ethnic issues, and socializing with someone from another racial-ethnic group had modest, but statistically significant, positive effects on specific self-reported gains in knowledge and skill acquisition.<sup>v</sup> Other analyses of CIRP data found that student body diversity at an institution significantly and positively predicted the level of student involvement in a range of diversity experiences, and that faculty of color tended to introduce diversity experiences into the curriculum significantly more often than white faculty.<sup>vi</sup> Because of the strength of external research, Cornell also can indirectly measure its student-learning goals such as knowledge and skill acquisition by measuring diversity on campus.

One of the most important tools that Cornell uses to measure student learning is the analysis of student satisfaction. Student satisfaction is highly correlated with involvement<sup>vii</sup> and academic performance.<sup>viii</sup> Seniors are asked, "Overall, how satisfied have you been with your undergraduate education?" More than 80 percent of Class of 2002 respondents answered "very satisfied" or "generally satisfied," and only 8 percent indicated dissatisfaction. The proportion of "very satisfied" seniors has increased slightly since 1994 (23% in 1994 and 29% in 2002).

The information gleaned from survey research at Cornell has helped inform program evaluation, policy deliberations, and decision making in the planning and programming of residential initiatives, the living-learning environment, and the delivery of student services. One important finding from these data is that the undergraduate experience at Cornell is far from homogeneous. Statistically significant differences have been frequently observed in students' reports of their experiences and perceptions across subpopulations based on race/ethnicity, undergraduate college, and gender. Rather than prescribe specific remedies, assessment data have identified or, in some cases, confirmed specific aspects of the undergraduate experience at Cornell that require improvement. As an example, comparing data across undergraduate colleges and over time has led to the revision of academic advising practices in several colleges. Survey data have also, in

some instances, signaled the need to collect more information about an issue. For example, successive surveys have shown significant race/ethnicity differences in students' satisfaction with the undergraduate experience and their level of involvement with faculty and other students; Asian students, both citizens and non-citizens, have often reported the lowest levels of satisfaction and involvement. These findings, coupled with similar observations among various student service delivery providers, have led to the establishment of a task force to more fully investigate the concerns and issues of Asian and Asian-American students at Cornell.

Cornell is committed to measuring learning in the residential initiatives. Cornell has taken leadership in this area of assessment, and in June 2005, Cornell hosted a conference examining research opportunities for the study of residential communities.

## CHAPTER SIX: PLANNING AND BUDGETING PROCESSES

### OVERVIEW

Cornell plans for the future thoughtfully, with multiple planning processes at many levels within the organization. Cornell's institutional priorities, highlighted in Chapter Three, were shaped as the result of a comprehensive planning effort a decade ago. The nine priorities that were articulated then remain the focus today, affirming that the strategic process responsible for their creation was appropriately rigorous, ambitious, and insightful.

Other planning activities occur more regularly within functional areas, colleges, and programs, both in the academic and nonacademic realms. These activities supplement and support the larger institutional priorities as well as provide direction at the local level. As will be highlighted in this chapter, planning at Cornell is a continual process focused on fulfilling institutional and unit priorities and identifying, allocating, and reallocating resources as necessary to achieve these objectives.

Academic planning drives the budget process. The provost works regularly with the Academic Council and deans and that informs, in turn, the budget processes that follow. Resource allocation is the result of a thoughtful process of self-examination and is an inherent part of ongoing activities. Central to the budgeting process is the Executive Budget Group, a committee, of which the provost is a part, tasked with defining the budget parameters for the Ithaca campus.

The linkage of academic planning, university priorities, and resource allocation is inherent in the budgeting function for the university, and the Division of Planning and Budget reports directly to the provost to ensure this alignment. Serving as the third leg of the stool, the Capital Funding and Priorities Committee (CFPC) is responsible for making internal capital decisions and includes both the president and the provost as standing members.

Cornell's complexity and richness demands careful planning, but the organization would not be best served by a one-size-fits-all process. Instead, Cornell also is able to develop and adjust planning processes to fit current objectives and institutional needs. For example, the Presidential Task Forces—groups of faculty and senior leaders—are presently examining the ways the world is changing in the areas of sustainability, genomics, and digital information and how Cornell is uniquely positioned to make contributions to these critical global issues. These task forces are one way Cornell continually assesses its strategic path, reviewing progress that has been made and aligning priorities with the changing world.

The annual operating budget of the Weill Medical College represents just over 20% of Cornell's total annual budget. Budget planning and development at the Medical College is coordinated by the Office of the Provost for Medical Affairs, however, the structure of the Medical College, with its additional location in Qatar and a Physician Organization that generates in excess of \$300 million in patient care receipts each year, requires that detailed planning and budget development be carried out at the major program and departmental levels.

The budget for the Qatar program has a sole source of revenue, which is guaranteed by a multi-year contract with the local program sponsor. The Qatar program is now in its fourth year, with over 110 students enrolled, and expense planning is entirely focused on support of the pre-medical and medical curricula. In New York City, the Physician Organization conducts detailed reviews of each clinical department budget plan and annual budget submission to ensure operating equilibrium. Budget planning meetings are also conducted with the College's principal affiliate, the New York Presbyterian Hospital, since it provides almost \$100 million

dollars per year to the College for the services of faculty in the management and residency training activities of the Hospital's clinical programs. The Provost for Medical Affairs provides annual budget allocations to the academic departments of the Medical College to support their medical and graduate student training activities. This amount is reviewed annually by the Provost for Medical Affairs' executive staff and modified based on programmatic needs and resource availability. All elements of the various program budgets above are consolidated into a single budget document for each department for review and approval by the Provost for Medical Affairs.

## **PLANNING AND BUDGETING PROCESSES**

### **Academic Planning**

The Faculty Senate is the governing body of the university faculty and involves twenty-four committees tasked with reviewing different academic areas on a continual basis. One of these committees is the Faculty Committee on Program Review (FCPR), a committee composed of ten faculty representing Cornell's broad disciplinary areas that, in 1996, began overseeing the review of all academic programs and departments at Cornell on a periodic basis. This process, called the Academic Program Review, is now entering its tenth year. The reviews involve a comprehensive self-assessment as well as an external review. The findings from the reviews help establish the direction of the different departments, centers, and programs.

The deans of all the colleges as well as the Academic Council meet regularly with the provost to review the strength of programs and establish and pursue academic priorities. The Academic Council is a group of faculty leaders who represent areas of strategic emphasis for the university. The Academic Council reviews three areas: current academic program reviews; overarching priorities for each major discipline as well as resource allocation to support those priorities; and campaign priorities to ensure alignment with academic priorities. This group also provides oversight and direction for the three Presidential Task Forces, mentioned in the overview of this chapter.

### **Strategic Planning and Assessment**

Cornell engaged in a strategic planning effort for the Ithaca campus from 1992 to 1995. The effort began with a number of perceptual studies that were designed to identify and quantify the degree of stakeholder satisfaction with Cornell's programs and services. Based on these studies and input from an advisory board that included outside experts, a set of study groups was created to analyze various aspects of the university. These study groups focused on areas such as university organization and support services and student recruitment and retention. The advisory board combined the study group information with the key issues that emerged from the perceptual studies and reduced these to a limited set of high-priority issues. The issues were grouped under four themes: educating the leaders of tomorrow, generating and applying knowledge, exercising effective stewardship, and creating the faculty of the future. A task force was organized around each theme and was asked to develop recommendations that might be adopted to address the specific issues raised.

Incoming President Rawlings described the theme for implementing a strategic plan for Cornell in his 1995 inaugural address, in which he called upon the Cornell community to join him in "composing a new Cornell" that was focused on cultivating the human mind as the university's primary reason for being. That strategic plan had nine thrusts, most of which were directly related to task force recommendations:

- To improve undergraduate education (taking advantage of the strengths of a research university), transform the residential experience, and create

a living-learning environment that will benefit all freshmen and provide new opportunities to upperclassmen

- To support strategic enabling research areas
- To foreground and enhance developments in the humanities and social sciences
- To improve faculty and staff compensation
- To increase the information technology capabilities for faculty, students, and staff
- To fortify Cornell's long-term relationship with New York State and the State University of New York
- To maintain broad student access
- To enhance diversity
- To maintain Cornell's quality by encouraging sound resource management and carefully planned improvements

As covered in Chapter Three of this report, over the past decade much has been achieved toward furthering these goals. In some areas, such as improving faculty and staff compensation, success can be claimed or is imminent. In other areas, work remains. Although Cornell has experienced two changes in the Office of the President during this time, these nine strategic thrusts have remained the institutional priorities, providing focus for planning and resource reallocation analysis and decision making.

Although priorities have remained consistent, efforts continue to evolve to fulfill these priorities today and into the future. Currently, three task forces are analyzing ways Cornell is poised to make large contributions to emerging global issues. These task forces are looking at three areas: Life in the Age of the Genome; Wisdom in the Age of Digital Information; and Sustainability in the Age of Development. These areas offer opportunities for Cornell to establish leadership in areas of critical social importance. Three groups of distinguished faculty members have been working since early 2005 to develop action plans addressing these areas. The first two areas drew on existing Cornell initiatives that would benefit from more interdisciplinary activity, and the third, Sustainability in the Age of Development, emerged as an emphasis in the context of the Call to Engagement exercise in 2004, in which then President Jeffrey Lehman called on the Cornell community to enter into a dialogue about essential questions for Cornell. The analysis coming from the task forces will provide more contextual richness for the current university priorities, keeping them current and linking them more clearly to our changing world. The task forces are helping develop priorities and enhance interdisciplinary activities and will begin deciding on areas to target for further investment.

### **Annual Reports and Budget Planning**

Cornell employs a decentralized budgeting model that places a large degree of accountability for stewardship and fiscal planning at the local level. Each unit employs a financial officer who works alongside the dean or vice president to guide financial decision making and planning and to oversee financial activity within the unit or college and to create an annual budget for the college. These financial officers also have functional working relationships with the executive vice president for finance and administration, the vice president of financial affairs and university controller, and the vice president for planning and budget, helping to ensure financial coordination at the university level.

Each college within Cornell is responsible for setting both short-term and long-term goals for its unit and planning strategies to meet those goals. The goals are informed and influenced by the more comprehensive institutional-level priorities. The president and the provost review the

college plans via an annual report process to ensure they support and further Cornell's broader mission. Each college must show evidence of curriculum review processes to change and/or improve educational programs and include goals for scholarly activity appropriate to the institution's purpose and character.

Cornell's financial plan is published each May. The plan is predicated on the budget policies approved by the Board of Trustees and the Board of Overseers. Cornell's composite operating plan is based on the plans of its two divisions: Ithaca and the Medical College. Schedules show the overall university plan and also presents the plan's divisional components.

The annual publication of the operating and capital financial plans includes each college's individual operation plans as well as summary plans for other major operational segments. The overview of the college plans in the publication highlights the various academic initiatives that are either under way or being planned in the colleges, thus integrating the financial plan with the academic mission(s) for each college.

### **Campaign Planning and Fundraising**

One example of linked budgeting and planning processes is how the institution has planned for the next fundraising campaign. The multi-year planning process is supported by both Alumni Affairs and Development and the Division of Planning and Budget and is driven by academic needs and vetted by the academic planning process. The top campaign fundraising goals are aligned with institutional priorities, such as investing in strategic enabling research areas, enhancing diversity, increasing accessibility to a Cornell degree, enhancing undergraduate education, and attracting and retaining exceptional faculty.

### **Capital Planning**

The space and facilities needs of the university are met through an extensive capital planning process. This process begins with the identification of needs at the operating unit level. Program needs are defined, facility plans are developed, and the associated capital projects and related operating costs are evaluated as part of Cornell's operating and capital budget processes, leading to an eventual review and approval by the Board of Trustees. A plan is prepared for each capital project that details:

- the project's full costs, including project-specific infrastructure requirements;
- all funding and financing sources (if debt financing is employed), including a cash inflow schedule;
- a project schedule, including workload and cash outflow requirements; and
- an estimate of and funding plan for the operating and maintenance costs created by the project.

The university's capital plan consolidates the individual project plans into a "big picture" view of facilities projects that includes their economic and operational impacts. Projects are evaluated in relation to the university's academic and other priorities and are then organized into major investment groupings such as undergraduate education, research, and renewal/infrastructure. These groupings reinforce strategic priorities and integrate the strategic plan into the capital planning process. The capital funding needs are examined for fundraising feasibility and campaign planning, operating budget impacts, connection with the SUNY capital planning and funding process, and debt financing requirements. The planned schedule of projects describes cash flow requirements that must be anticipated. The extent to which the capital projects address the university's inventory of deferred maintenance and the estimated impact on annual operating and maintenance costs are factored into facilities maintenance and operating budget planning.

Other planning efforts that are related to the university's facilities plans include:

- campus master planning, which allows Cornell to consider the physical implications of expansion as well as densification on land and infrastructure and to establish guidelines for long-term growth;
- space utilization and allocation studies, which help Cornell better utilize its existing facilities;
- university debt planning, which enables the institution to make maximal beneficial use of taxable and nontaxable debt proceeds;
- planning designed to address and manage the university's deferred maintenance inventory; and
- infrastructure planning for utilities, transportation, and the voice and data networks.

These efforts are sometimes undertaken to evaluate a particular area or address a specific issue, and at other times the efforts are conducted with a more global campus view. Recent examples of the former include:

- a planning study focused on the "science sector" east of East Avenue and north of Tower Road;
- space utilization studies of the Colleges of Engineering and Agriculture and Life Sciences; and
- a utilities master planning effort that is currently under way.

Examples of the latter include an anticipated comprehensive plan for the Ithaca campus and a Generic Environmental Impact Study for campus transportation issues that is expected to begin in 2006.

The Capital Funding and Priorities Committee (CFPC) is responsible for ensuring that projects are thoroughly planned, are consistent with university priorities, and are adequately financed. Both the president and the provost are standing members of this committee, thereby ensuring that academic priorities take precedence for critical resource allocation decisions.

## **ORGANIZATIONAL STRUCTURE**

Cornell's Division of Planning and Budget is a part of the Provost's Office. Reporting directly to the provost allows the division to be actively involved in all aspects of the institution, connecting budgetary support decisions and resource allocation planning directly to institutional priorities. This relationship links strategic planning with budgetary realities.

Along with performing budgetary and institutional research functions, the Division of Planning and Budget also provides support for the Academic Program Review process, an ongoing effort to review, assess, and improve major support functions across campus, and for planning related to institutional and unit priorities for the upcoming fundraising campaign.

The Financial Policies Committee of the Faculty Senate is another example of an organizational link between the academic mission of the university and the financial workings of the university. The committee is composed of eleven members of the faculty, appointed by the Faculty Senate. The vice president for planning and budgeting is an additional ex-officio, nonvoting member.

The committee is tasked to:

- undertake a continuing and comprehensive analysis of the financial condition and policies of the university and develop priorities, based on educational considerations, that should be reflected in the budgets of the Ithaca campus.
- participate, with the cooperation of appropriate administrative officers, in the endowed and statutory budget-planning process.
- consider the financial implications of all issues for which responsibility is also assigned to other Faculty Senate committees (e.g., financial aid and retirement policies).
- examine and make recommendations concerning issues and considerations that affect the economic status of the faculty. Such examinations include, but are not limited to, improving the conditions of employment, including salary levels, fringe benefits, leaves, consultation, and interdepartmental compensation.

### **RESOURCE ALLOCATION AND INSTITUTIONAL RENEWAL**

The university routinely employs strategies to adapt to changes in revenue growth and the funding needs of academic priorities. Examples include:

- Energy conservation measures—The university has several energy savings projects under way, from installing lower-cost light fixtures to modifying the heating plant to reduce fuel consumption.
- Consolidation of animal research support services—Cornell's multiple animal care venues are being reduced through the construction of a central campus animal facility, upgrades to existing facilities, and program management consolidation.
- Changes in procurement procedures—The university is conducting a thorough analysis of spending patterns and vendor sources to maximize procurement cost savings. Also, the university has joined a cooperative to improve vendor pricing for pharmaceuticals for employee benefit plans.

### **Administrative Functional Review and Reallocation of Resources**

The Workforce Planning effort is another example of strategies used to adapt to changes in funding needs. This effort involved a comprehensive review of major administrative and other support functions on the Ithaca campus. The focus on improving effectiveness and efficiency was not a new concept for the Ithaca campus when the Workforce Planning initiative began in November 2001, nor were many of the basic tenets that shaped the focus of this initiative. Recommendations from the university's 1992-1995 strategic planning effort called for the organizational structure of the university to be "strategically conceived to support the decision making and programmatic interactions most important to our success." The final report of the Task Force on Exercising Effective Stewardship recommended use of reengineering techniques, clarification of responsibilities, establishment of incentives, and consolidation of administrative services to achieve greater efficiency as well as improved quality in support operations.

Project 2000 followed with the objective of developing radically new and different ways of doing business to provide better service at lower cost. Reengineering policies and practices began as a major component of the Project 2000 effort, along with the implementation of new core administrative systems. However, the magnitude, complexity, and resource requirements of

implementing new administrative systems eventually consumed the reengineering efforts, and the vision of more-effective processes university-wide was not realized. Individual operating units and central functional offices continued to create and seize opportunities to make improvements when possible, but these efforts did not result in broad, consistent, and coordinated adoption throughout the campus.

Unlike the systems implementation focus of Project 2000, the primary focus of the Workforce Planning initiative was on defining major roles, responsibilities, and accountabilities for functional activities across organizational boundaries. This was deemed the critical first step necessary to achieve sustainable improvement in both the effectiveness and the efficiency of campus wide support functions before the tools that would assist in streamlining work (such as technology and systems) would be considered.

Workforce Planning was driven by the very clear objective to realize significant financial savings. In prior years, financial challenges were typically met by assigning budget reductions to each operating unit and allowing each dean or vice president to make their own discrete decisions about where to reduce costs. The impact of this practice on support activities was a widely differentiated and uncoordinated system of support between operating units and central offices. Workforce Planning responded to this by initiating reviews of entire support functions, thereby achieving greater consistency in the definition and coordination of responsibilities. Each Workforce Planning review was charged with realizing a significant amount of financial savings, and as an incentive to each unit, the savings realized would generally remain within the operating unit in which the savings were achieved.

Eight specific functional reviews were conducted under Workforce Planning, including human resources, financial transactions, alumni affairs and development, information technology, facilities, student support, libraries, and purchasing. A main goal of the Workforce Planning initiative was a reallocation of resources to support targeted uses. In July 2002 President Rawlings established a goal to "make available \$20 million for reallocation to institutional and unit-specific strategic priorities by fiscal year 2004-05." He further stated that achieving the goal "will require a combination of efforts, including workforce planning, academic program reviews, and the implementation of targeted budget reductions."

Significant progress has been made and positive results achieved toward accomplishing Workforce Planning's original objectives of clarifying roles, responsibilities, and accountabilities; realizing significant financial savings; and improving the effectiveness of major support functions. Specific changes include: the establishment of a shared-service model in human resources and finance, leading to greater efficiencies and effectiveness; annual financial savings of over \$15 million; a reversal or slowing of the rate of staff growth in most nonacademic support functions during the duration of the review effort; and an overall strengthening of the ratio of direct mission costs (instruction, research, and public service) to support costs (academic support, student services, institutional support).

While the Workforce Planning effort accomplished much, its most significant impact is that it has set in motion an institution-wide focus on continual review and improvement of operational support activities and on the long-term objectives of optimizing the effectiveness and efficiency of operational support activities on campus.

The Workforce Planning effort has helped create a sense of institutional drive, leadership, and in some cases, cover for tackling organizational issues that have existed for a long time in core functional areas and in individual operating units. The framework and guiding principles of this

planning initiative positively influenced other planning discussions centrally and in campus units. These principles include:

- Clarify roles and responsibilities and assign responsibility where it can be managed most effectively.
- Clarify accountability.
- Increase efficiency and effectiveness.
- Seek broad solutions to local challenges.
- Define priorities and reallocate resources accordingly.
- Pause before adding new staff to consider other options (e.g., shared services).

The Workforce Planning initiative effectively served as the first phase of a continuous university-wide effort intent on ensuring agile and responsive systems of support at the lowest possible cost. This initiative has transitioned to an ongoing university function supporting new and continuing planning efforts that address major operating challenges on a university-wide basis. Further progress in integrating, coordinating, and redefining support activities across the university is vitally important to ensuring high-quality support to academic programs in the future. The Office of Institutional Planning and Assessment in the Division of Planning and Budget has been established to oversee and support this task. A cornerstone of this continuing initiative is to develop a deeper and more complex understanding of the similarities and differences in support requirements across units and engage in productive review across organizational boundaries and functional areas.

The Workforce Planning reviews have highlighted the fact that support operations at Cornell, both centrally and at the unit level, have at times suffered from an inability to integrate activities across organizational units. The result has been inconsistent perceptions of quality and responsiveness, lack of mutual trust and respect, wasted resources, and, in places, a “silo-oriented” culture that has evolved to an accepted norm. Progress made in several Workforce Planning reviews indicates that the culture is beginning to change, but continued, focused effort is essential to avoid a reversal in the progress made and to realize the full potential such change can bring. Future efforts toward expanding collaboration and establishment of shared accountability will be driven by the following key principles:

- Rigid one-size-fits-all approaches are generally not the solution in Cornell’s complex environment. The integration of support activities across organizational boundaries and functions should be optimized without prejudice toward a particular method of doing so. Cornell must strive to achieve greater integration of university support operations without calling for centralization or the elimination of all unit differences. Common needs should be met with common systems, processes, and services. Unique unit differences and requirements should be addressed to the extent possible by building upon common solutions rather than creating entire individualized systems.
- Unit-specific needs and university needs are inextricably linked, and neither can be fully satisfied separately. Actions that optimize the functioning of a particular department or central unit without addressing the needs of other stakeholders (i.e., local optimization) are typically counterproductive and costly. Decisions that lead to local optimization should be made with an awareness and assessment of any costs to the greater community, including the cost of minimizing the potential for university-wide integration.

- Accountability must be based on clear expectations jointly defined and regularly evaluated by all relevant stakeholders. Without clear expectations that are understood and accepted by all relevant stakeholders, individual performance accountability will generally be self-defined and often based solely on meeting local needs. This is ineffective in the long run and is counter to promoting a campus wide culture of trust, collaboration, and shared accountability.

Improving the effectiveness and efficiency of support operations is not only a worthy goal, but a fundamental stewardship responsibility essential for ensuring that resources are allocated most effectively and high-quality support is provided for core-mission activities. Follow-up reviews are scheduled to occur in 2006 in all functional areas to assess the success of implementation efforts and to ensure the changes continue to make support activities more efficient and effective.

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