

Progress Report to the
Middle States Commission on Higher Education
from
CORNELL UNIVERSITY
Ithaca, NY 14853

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March 27, 2013

Subject of the Report:

To request a progress report, due April 1, 2013, documenting further progress in the implementation of (1) an organized and sustainable assessment process, including direct measures, to evaluate and improve institutional effectiveness (Standard 7); and (2) an organized and sustainable process to assess the achievement of student learning goals at the course and program levels, with evidence that assessment information is used to improve teaching and learning (Standard 14).

Date of the Evaluation Team's Visit:

March 27-30, 2011



Cornell University

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Introduction

In its assessment of Cornell University after the 2011 site visit (March 27 - March 30) the evaluation team representing the Middle States Commission on Higher Education concluded:

This decennial reaccreditation review process confirms the team's belief that Cornell University is now, and will continue to be, one of the world's preeminent institutions of higher learning. All of the evidence reviewed indicates that Cornell's programs of research and teaching are of the highest caliber and that the University's human, fiscal, and physical resources are managed and nurtured prudently and responsibly.

The team further recognized Cornell's "significant effort to develop a 'culture of assessment' over the last year" and recommended that "there be follow-up to ensure that the University is carrying out its plans for implementing a systematic and sustained culture of assessment."

On June 23, 2011, the Middle States Commission on Higher Education acted:

To reaffirm accreditation and to commend the institution for the quality of the self-study report and the quality of the self-study process. To request a progress report, due April 1, 2013, documenting further progress in the implementation of (1) an organized and sustainable assessment process, including direct measures, to evaluate and improve institutional effectiveness (Standard 7); and (2) an organized and sustainable process to assess the achievement of student learning goals at the course and program levels, with evidence that assessment information is used to improve teaching and learning (Standard 14).

In the period that has followed our reaccreditation, Cornell has made substantial progress in further enhancing the culture of assessment, implementing activities in both institutional assessment and in the assessment of student learning.

This report documents this progress in two sections. The first section, *Standard 7: Advancing Institutional Assessment*, describes our progress in three areas:

1) increasing the utility and accessibility of centralized reporting; 2) strategic plan reporting; and 3) using data to inform resource allocation decisions with the new budget model. The second section of this report, *Standard 14: Advancing the*

Assessment of Student Learning, provides an overview of assessment at Cornell by touching on three general areas: 1) the continuing development of a centralized framework for managing the highly-distributed assessment of student learning; 2) the assessment of student learning *in* the classroom, as illustrated with some examples of the larger service courses at the university; and 3) the assessment of student learning *beyond* the classroom, as illustrated through the university's learning goals of multicultural competence and community engagement.

Standard 7. Advancing Institutional Assessment

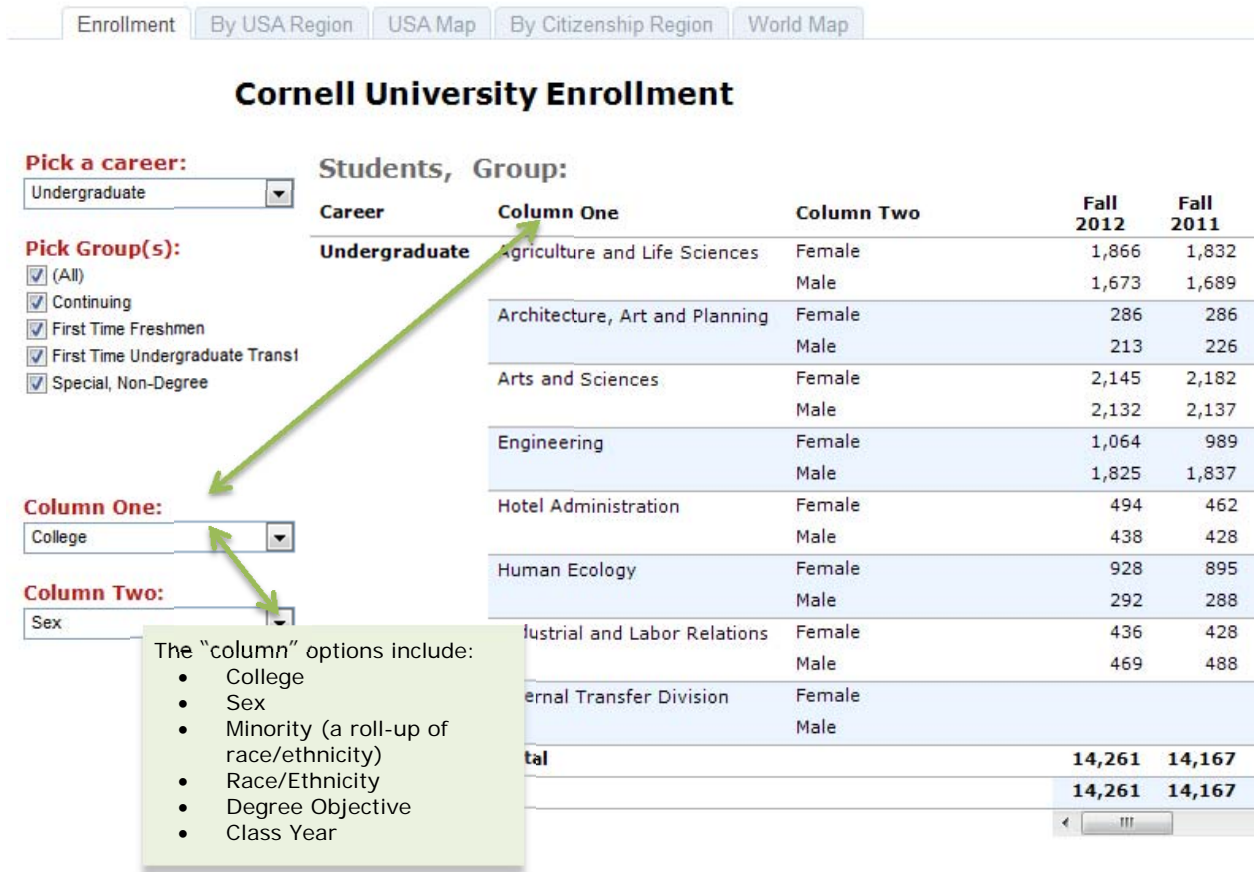
Enhancing the Utility and Accessibility of Centralized Planning Data

Cornell's office of Institutional Research and Planning (IRP) took shape in the late 1970s and has been charged from the beginning with providing data to support decision-making. For many years, IRP produced the Cornell University Fact Book as a paper document bound in a three-ring binder. In 1996, that publication migrated to the web where it could be accessed as hundreds of individual PDF files. The multiplicity of pages reflected the fact that people wanted information aggregated in different ways: counts by college, counts by sex, counts by college and sex, counts by sex and race but not college, and so on. The compilation of pages for the Fact Book was comprehensive but sometimes hard to navigate.

In 2012, Institutional Research and Planning embraced a business intelligence tool for data delivery: Tableau. Tableau enabled IRP to replace dozens of static PDFs that each summarized one aspect of the university in a different way with a single "data visualization" (either a table or a figure) that is interactive. Figure 1, for example, illustrates a screen capture of enrollment information conveyed through a Tableau visualization. By manipulating the available dropdown menus (e.g. "Pick a career" or "Column One") any visitor to the IRP website can look at enrollment figures in dozens of different configurations.

Data sharing through this tool is not just limited to enrollment figures. For example, IRP is increasingly using these kinds of visualizations to communicate survey results to institutional leadership and to broader audiences. The public visualizations associated with the *2012 New Student Survey* have been accessed and viewed more than two thousand times. Feedback from internal constituencies throughout the university has indicated that it has become easier and faster to find precisely the information they seek.

Figure 1. Cornell University Factbook: Screen Capture of Enrollment Detail available at <http://irp.dpb.cornell.edu/university-factbook>



Part of the appeal of Tableau is that users can be provided with the ability to filter data at a fine-grained level. Cornell has close to a hundred academic departments within its eleven colleges, as well as a strong history of decentralized administration. Given the size and complexity of the university, providing program-level reports to support decision-making at the deans' level had been often too resource-intensive for centralized offices to undertake. However, both IRP and Cornell's Graduate School are now using Tableau to support the delivery of decision-support information at all relevant levels of specificity. Now, it is quite manageable to connect university-level results to the colleges and the individual departments that are most accountable for outcomes.

To further support the on-going analytical needs of the college and administrative units, the university also launched an *Institutional Intelligence* initiative in 2012. This collaboration between Cornell Information Technologies and the Division of Planning and Budget is in "Phase I" and project team members are actively

engaged in understanding how best to support the analytical needs of Cornell's senior leaders with cross-functional information in a single, dynamic executive dashboard. The first stage of the Institutional Intelligence is scheduled to deliver 40 or more key metrics to the Board of Trustees in May 2013.

Assessing Progress on the Strategic Plan

In the 2011 report of the Middle States evaluation team, Cornell's new strategic plan was highlighted as a focal point of institutional assessment:

With the completion of the 2010-2015 strategic plan, Cornell now has a framework from which to implement systematic and comprehensive use of assessment data to achieve institutional renewal. The team concurs with the self-study's recommendation to implement the highest priority institutional assessment activities identified in the strategic plan. Cornell is on track to fully implement the process that has been developed to assess, evaluate, and improve the complete range of programs and services that together enable the sustainable achievement of institutional goals and objectives.

Our strategic plan outlines five "overarching goals," thirty-one specific objectives, and seven strategic initiatives in service of those goals and objectives.¹ The 2010 plan also establishes a plan for assessing progress. As the evaluation team noted,

[T]hese metrics will now be prioritized so that a small number of focused metrics can be used to ascertain success.

Two, connected efforts have focused on tracking progress on the strategic plan. First, the Provost has established clear expectations that the colleges will participate in the university's seven strategic initiatives. On at least an annual basis, the deans must provide the provost with an accounting of their progress vis-à-vis each initiative. In turn, these college-based initiatives are summarized along with broader university-level initiatives on an internal, secure website established for the Board of Trustees (see Figure 2).

¹ A succinct summary of Cornell's strategic plan is available here:
<http://www.cornell.edu/strategicplan/docs/060410-strategic-plan-summary.pdf>

Figure 2. Cornell University Strategic Initiatives internal website: Screen Capture
[https:// trustees.cornell.edu/secure/Strategic_planning/Overview.html](https://trustees.cornell.edu/secure/Strategic_planning/Overview.html)

Overview Table of Contents Faculty Renewal Critical Fields
Culture of Teaching Connections Across Colleges Infrastructure Diversity
Outreach Faculty Excellence Staff Excellence Organizational Excellence

Cornell University Strategic Initiatives

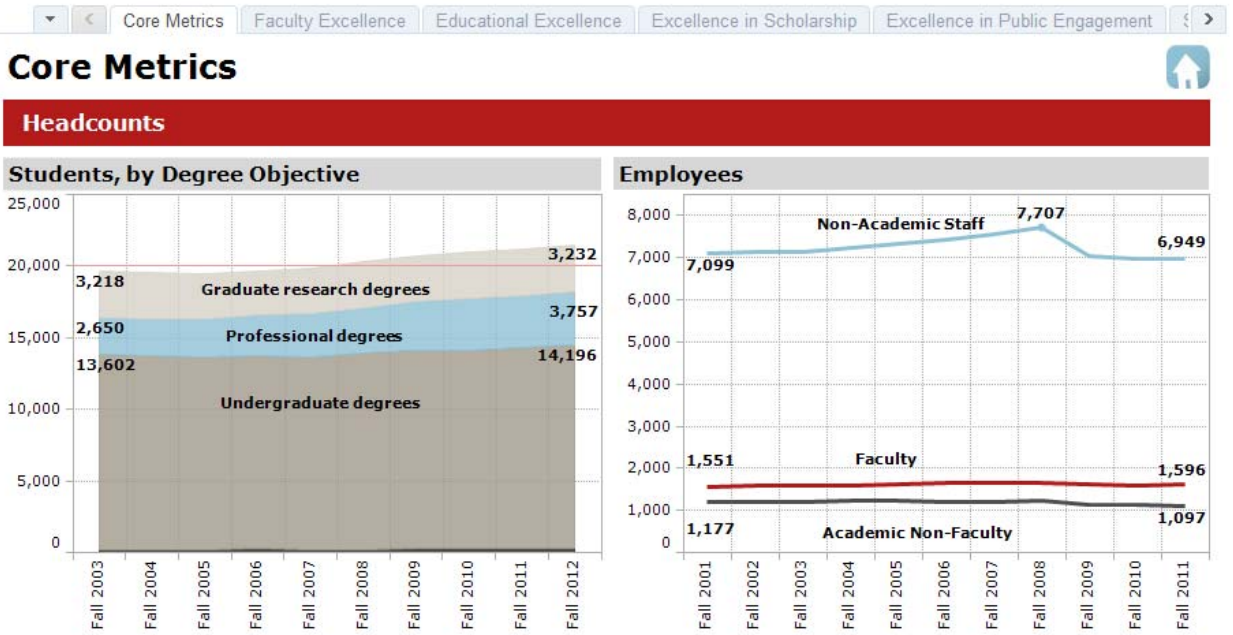


Strategic Initiative Progress, 2010-2012

In its 2010 Strategic Plan, "Cornell University at its Sesquicentennial," the university established seven strategic initiatives to guide its planning over the next five years. This report details some of the progress toward these goals made by the different colleges during the first two years of the plan.

Second, in collaboration with the senior leadership of the university, the office of Institutional Research & Planning has developed a public *Strategic Metrics* dashboard, <http://irp.dpb.cornell.edu/strategic-metrics>, to track Cornell's progress on the strategic plan's objectives as well as on the "core metrics" that are essential to the university's performance. A small portion of the Strategic Metrics dashboard is illustrated in Figure 3.

Figure 3. Cornell University Strategic Metrics: Partial Screen Capture
http://irp.dpb.cornell.edu/tableau_visual/strategic_metrics



The Strategic Metrics dashboard has seven “tabs” running across the top:

- Core Metrics
- Faculty Excellence
- Educational Excellence
- Excellence in Scholarship
- Excellence in Public Engagement
- Staff Excellence
- Diversity

Each tab includes a small number of figures or tables that provide targeted essential performance indicators relevant to university objectives in that area.

The Strategic Metrics dashboard was rolled out to the Board of Trustees in October 2012 and made public shortly thereafter. The Board of Trustees requests an annual update of progress on the Strategic Plan from the provost, and the Strategic Metrics dashboard will provide key context for that conversation each year.

The New Cornell Budget Model

Early in 2009, the provost charged several task forces “to think deeply and creatively on how to reduce costs and enhance the university’s academic

excellence.” One of those task forces was charged with examining the university’s budget model.

As discussed in detail in Cornell’s 2011 self-study, the 2009 Budget Model Task Force articulated a clear need for a single, comprehensive budget model to replace what is, in effect, *several* budget models. (Some colleges have operated as independent financial “tubs,” while several other colleges have been allocated funding through a single “general purpose” budget, managed and overseen centrally. In addition, while Cornell is a private university, four of the eleven colleges operate under contract with New York state such that their students pay “in-state” tuition, and state funding is available for capital projects within those colleges.)

For the last three years, the campus has been engaged in a thorough refiguring of how funding would flow in a new budget paradigm that is, to a substantial degree, an activity-based budget model. That conversation has progressed from generalities to specifics, and from proposed principles to implementation details. A new, comprehensive Cornell Budget Model will be implemented for the first time in fiscal year 2014.

The new budget model is built upon a number of metrics, including teaching loads, total research expenditures, space use, and other key indicators. This has greatly increased the profile of budget-related metrics on campus, and the units were active partners in reviewing centrally-provided data in the budget construction process for FY 2014. Further, there was not just an increased interest in those indicators that are explicitly built in the budget model, but also in omitted measures that can still provide compelling evidence of excellence in the delivery of the university’s mission. Clearly, the new budget model is contributing greatly to interest in key performance indicators at all levels of the university.

To assess the impact of this significant change in our budgeting practices, the provost’s office has launched three separate efforts. First, the Division of Planning & Budget prepared two budgets for fiscal year 2013: one based on past practices, and one built on the framework that would be used going forward. This exercise helped to identify the potential impacts of this change well before the model was implemented so that they could be disclosed and discussed with appropriate stakeholders.

Second, the university has invited a team of budget and finance executives from peer institutions to visit Cornell to review and comment on the mechanics of our new model. Their insights into the strengths and weaknesses of our approach will be carefully weighed by Cornell leadership.

Third, in order to monitor the impacts of the new budget model, the provost has established a new Educational Planning and Policy Committee chaired by the Vice Provost of Undergraduate Education to examine changes in course enrollments, class sizes, cross-college enrollments, and other quantitative and qualitative indicators related to the delivery of our educational mission. Because the new budget model gives the provost a significant resource pool for strategic investments, the information compiled by this committee (and/or other committees in this vein that may be formed in the future) can influence the distribution of the university's financial resources even if it is not directly incorporated within the more formulaic parts of the budget model.

In short, Cornell's new budget model has already advanced our institutional assessment activities. While we expect that an intensified focus on key performance indicators will contribute to institutional improvements, we are committed to assessing the impact of model itself in our cycle of continuous improvement.

Advancing the Assessment of Student Learning

The Framework for Assessment at Cornell University

At the time of the 2011 self-study, Cornell had taken several major steps to develop a comprehensive approach to assessment. These steps included:

- establishment of a half-time position of an assessment project manager to support assessment planning at all levels;
- hiring of an associate director for assessment by the Center for Teaching Excellence; creation of workshops and individual support opportunities for faculty on assessment practices through that center;
- establishment of the Core Assessment Committee charged to manage assessment processes across the campus, chaired by the Vice Provost for Undergraduate Education and including, generally, an associate or an assistant dean from each of Cornell's colleges;
- creation of a leadership structure within each college or school to oversee the assessment of student learning; and
- incorporation of learning outcomes at all levels in *Acalog*,² a web-based software product used for the university's online course catalog.

Since Cornell's reaccreditation in 2012, these developments have continued to mature as part of the fabric of the institution. Additional developments include:

- the Core Assessment Committee (CAC), continuing to meet regularly, has grown in size to include student affairs professionals from the division of Student and Academic Services and additional representation from the Center for Teaching Excellence;
- centralized support of *Mahara* and *Digication*, two e-portfolio platforms, to support the assessment of student learning within courses, across programs, and throughout students' academic careers at Cornell;
- a central website, "What Are Cornell Students Learning?," available at <http://www.cornell.edu/academics/goals/> and illustrated in Figure 4, that features the learning outcomes developed in the seven undergraduate

² *Acalog* stands for *Academic Catalog Management*. See <http://www.acalog.com/>

colleges, in graduate and professional programs, and for programs beyond the classroom.

We appreciate the recognition and encouragement provided by the evaluation team's report following their 2011 visit to our campus:

There is every indication that Cornell will develop sustainable processes that will result in improving student learning. There is already strong indication that the process of developing learning goals and outcomes has had a positive impact on departments' curriculum design and development efforts. Employing the curriculum mapping process has enabled departments to identify both gaps and redundancies in their curriculum.

This report outlines the progress that has been made to date in carrying out our plans for implementing a systematic and sustained culture of assessment.

What Are Cornell Students Learning?

Featured prominently on the university's website (illustrated in Figure 4, but see also www.cornell.edu/academics/goals/), the university-wide learning goals provide the context for academic offerings at Cornell, as well as for a number of university initiatives and programs that support student development and life in the broader educational community of the university. In addition to the university-wide goals and initiatives, the website also includes links to each of the colleges' learning goals and programs of study. Representative examples of student learning achievements are displayed as vignettes, illustrating the breadth of learning opportunities available at Cornell. This resource also includes links to programs with learning goals that are achieved outside the formal classroom environment, through the numerous and diverse programs that support learning in less formal settings, including co-curricular and extracurricular activities.

Figure 4. Student Learning Outcomes Website, www.cornell.edu/academics/goals/



The websites of all schools and colleges at Cornell (undergraduate, graduate and professional) a goals for student learning within the context of their respective missions and academic programs. Each is available online.

Cornell's undergraduate colleges:

- cals.cornell.edu/academics/advising/academic/learning-outcomes/
- aap.cornell.edu/ddp/learning-outcomes.cfm
- as.cornell.edu/admissions/ed-goals.cfm
- www.engineering.cornell.edu/about/mission.cfm#CP_JUMP_7918
- www.hotelschool.cornell.edu/academics/outcomes.html
- www.human.cornell.edu/admissions/mission.cfm
- www.ilr.cornell.edu/student-services/curriculum/requirements/

Cornell's graduate and professional schools:

- gradschool.cornell.edu/academics/learning-assessment
- www.vet.cornell.edu/education/dvmprogram/educationalgoals.cfm
- support.law.cornell.edu/students/forms/current_Course_Descriptions.pdf
- www.johnson.cornell.edu/About/Why-Johnson/Performance-Learning.aspx
- weill.cornell.edu/education/curriculum/edu_obj.html
- weill.cornell.edu/gradschool/academic_information/learning-assessment.html

Articulating the many ways in which the university's learning goals are achieved, assessed, and enhanced at an institution as large and complex as Cornell can be challenging. We have found it helpful to develop a matrix that illustrates the contributions of the undergraduate colleges and a range of campus-wide programs to the achievement of the university-wide goals for student learning (see Table 1). The matrix provides a framework for mapping the college-level learning goals to those of the university, illustrating how and where they are achieved in the colleges, and it helps to identify where they are most appropriately assessed.

Gaps in the matrix highlight areas where colleges' explicit learning goals do not map directly to the university-wide goals. However, it would be difficult to argue that these broader goals are not being met within those colleges. Across campus, faculty are engaged in the process of making implicit goals explicit; there are gaps in some cases between explicitly stated goals, what faculty are actually teaching, and what students are learning. As the culture of assessment continues to take hold, we anticipate closer alignment of stated learning outcomes at the institutional, college, and course levels. The matrix has identified specific focal areas, which has been helpful for generating discussions within the Core Assessment Committee (CAC) and for targeting future efforts.

Indirect evidence of student learning outcomes gleaned from institutional research activities is also more effectively utilized when integrated with this scheme. Various student survey items, for example, have been mapped to the university learning outcomes, as illustrated in Table 2. This exercise has helped

us to focus reporting of survey results on key measures that most closely align with identified learning goals.

For example, the Senior Survey is administered every other year to all undergraduates expected to graduate, and it achieves a response rate of about 50%. One focus of the Senior Survey is the self-estimated learning gains. This bank of questions begins with the stem, “To what extent has your experience at Cornell contributed to your knowledge, skills and personal development in the following areas?”

For all undergraduate academic programs across the university that have at least five graduating seniors completing the survey, customized department-level reports are prepared by Institutional Research and Planning and shared with the appropriate academic leadership. In 2012, 1519 seniors participated in the survey, and 64 department-specific summaries focusing on key learning objectives were distributed to units. An example of one Senior Survey department report is included as Appendix A.

While these survey-based reports provide only indirect measures of learning, they provide a standardized basis for comparison across the university, spark conversation and further analyses within academic units, and supplement more direct measures of learning outcomes to construct a fuller picture of student learning gains at Cornell.

Table 1. Matrix of Articulated University-Level and College-Level Learning Outcomes

University-Level Learning Outcome	College:							
	Arts & Sciences	Architecture, Art & Planning	Agriculture & Life Sciences	Engineering	Hotel Administration	Human Ecology	Industrial & Labor Relations	
Disciplinary Knowledge Demonstrate a systematic or coherent understanding of an academic field of study	●	●	●	●	●	●	●	
Critical Thinking Apply analytic thought to a body of knowledge; evaluate arguments, identifying relevant assumptions or implications; formulate coherent arguments	●	●	●	●	●	●	●	
Communication Skills Express ideas clearly in writing; speak articulately; communicate with others using media as appropriate; work effectively with others	●	●	●	●	●	●	●	
Scientific and Quantitative Reasoning Demonstrate the ability to understand cause-and-effect relationships; define problems; use symbolic thought; apply scientific principles; solve problems with no single correct answer	●	●	●	●	●	●	●	
Self-Directed Learning Work independently; identify appropriate resources; take initiative; manage a project through to completion			●		●	●	●	
Information Literacy Access, evaluate, and use a variety of information sources		●	●	●	●	●	●	
Engagement in the Process of Discovery or Creation Demonstrate the ability to work productively in a laboratory setting, studio, or field environment		●	●	●	●	●	●	
Multi-Cultural Competence Have knowledge of the values and benefits of multiple cultures; effectively engage in multicultural society; interact respectfully with diverse others; develop a global perspective	●	●	●		●	●	●	
Moral and Ethical Awareness Embrace moral/ethical values in conducting one's life; formulate a position/argument about an ethical issue from multiple perspectives; use ethical practices in all work	●	●	●	●	●	●	●	
Self-Management Care for one's self responsibly; demonstrate awareness of one's self in relation to others					●			
Community Engagement Demonstrate responsible behavior; engage in the intellectual life of the university outside the classroom; participate in community and civic affairs						●		

Table 2. Matrix of University-Level Learning Outcomes and Student Survey Measures

Learning Outcome	Example survey measures
Disciplinary Knowledge	Self-estimated learning gains in ability to: <ul style="list-style-type: none"> • Gain in-depth knowledge of a field (academic major, occupational field)
Critical Thinking	Self-estimated learning gains in ability to: <ul style="list-style-type: none"> • Formulate/create original ideas and solutions • Think analytically and logically • Synthesize and integrate ideas and information • Evaluate and choose between alternative courses of action Frequency during the academic year: <ul style="list-style-type: none"> • Worked on a paper or project that required integrating ideas or information from various sources
Communication Skills	Self-estimated learning gains in ability to: <ul style="list-style-type: none"> • Write effectively • Communicate well orally Frequency during the academic year: <ul style="list-style-type: none"> • Published or presented a paper or research off campus • Developed a web page • Used a computer to produce visual displays of information (charts, graphs, spreadsheets)
Scientific and Quantitative Reasoning	Self-estimated learning gains in ability to: <ul style="list-style-type: none"> • Use quantitative tools (statistics, graphs) • Understand the process of science and experimentation • Evaluate the role of science and technology in society Frequency during the academic year: <ul style="list-style-type: none"> • Completed an experiment or project using the scientific method • Read articles about scientific or mathematical concepts not assigned for a class or class project • Used mathematical terms or formulae to express a set of relationships
Self-Directed Learning	Self-estimated learning gains in ability to: <ul style="list-style-type: none"> • Acquire new skills and knowledge on my own • Function independently, without supervision • Plan and execute complex projects Frequency during the academic year: <ul style="list-style-type: none"> • Prepared a major written report, such as a thesis, honors project, or significant research paper • Worked on a class assignment, project, or presentation with other students
Information Literacy	Frequency during the academic year: <ul style="list-style-type: none"> • Worked on a paper project that required integrating ideas or information from various sources • Used a computer to analyze data (statistics, forecasting, etc.) • Used a computer to produce visual displays of information (charts, graphs, spreadsheets) • Developed a web page • Worked on a project that used a special collection of books, materials, or papers • Used a computer to retrieve materials from a library or source not at this institution

Table 2, continued on next page

Table 2, continued

Engagement in the Process of Discovery or Creation	<p>Frequency during the academic year:</p> <ul style="list-style-type: none"> • Practiced to improve skill using a piece of laboratory equipment • Worked with a faculty member on a research project for credit/not for credit
Multi-Cultural Competence	<p>Self-estimated learning gains in ability to:</p> <ul style="list-style-type: none"> • Relate well to people of difference races, nations, and religions • Develop awareness of social problems <p>Frequency during the academic year:</p> <ul style="list-style-type: none"> • Interaction with students of different race, sexual orientation, religious or political beliefs, personal values, or economic background than your own
Moral and Ethical Awareness	<p>Self-estimated learning gains in ability to:</p> <ul style="list-style-type: none"> • Evaluate and choose between alternative courses of action • Identify moral and ethical issues • Develop awareness of social problems
Self-Management	<p>Self-estimated learning gains in ability to:</p> <ul style="list-style-type: none"> • Understand myself: abilities, interests, limitations, personality • Resolve interpersonal conflicts positively <p>Frequency during the academic year:</p> <ul style="list-style-type: none"> • Participation in health and fitness activities • Alcohol use • Adapt to change <p>Also, items on sources of stress and experiences with depression</p>
Community Engagement	<p>Frequency during the academic year:</p> <ul style="list-style-type: none"> • Had intellectual discussions with a faculty member outside of class • Participation in various out of class activities <p>Experiences with:</p> <ul style="list-style-type: none"> • Extracurriculars such as student government, campus newspaper, literary magazine, orchestra, theatrical production, political organization, etc. • Leadership roles in governance, clubs, community service, etc.

A larger, even more inclusive version of the matrix summarized in Tables 1 and 2 includes an accounting of university initiatives that fall outside specific academic programs and/or the traditional classroom environment (see Appendix B). This more comprehensive matrix helps us maintain a focus on the whole student by highlighting the many ways in which the university supports learning across a student’s overall experience at Cornell.

For example, our new University Courses—courses that are intentionally designed to teach students to think from the perspectives of multiple disciplines and to create a common educational experience for students from different

colleges—aim to foster intellectual discovery, promote debate, and address complex issues. These courses address several university-level learning outcomes while spanning different colleges and academic departments. Student enrollment in University Courses for Spring and Fall 2012 was 1390. This number is expected to increase, not only because the number of course offerings will grow, but also because at least one of these courses will experiment with a new format: it will be offered as a massive, open, on-line course (or “MOOC”).

Similarly, living/learning initiatives in the residence halls are intended to amplify and enhance concepts from classroom learning, while building community among students and between students and faculty. One example, the West Campus House System, which serves close to 2000 undergraduates of sophomore and above status, emphasizes informal interaction with faculty members. Each of the five houses has thirty House Fellows, primarily faculty members, who interact with student residents, often over meals at the house. Programming in these residence halls complements students’ experiences within their academic programs, and contributes to the achievement of the university’s learning goals. Although assessment within the West Campus House System cannot rely on classroom-based direct measures, students are asked to reflect on their experiences regularly. Adjustments are made to better achieve programmatic goals and to enhance the quality of students’ learning.

In sum, as a tool for communicating more effectively about our programs’ strengths and weaknesses, the university-wide learning outcomes have served as a guiding framework for understanding learning outcomes within and across units throughout Cornell. They have helped us to reflect upon and to use information gleaned from other assessment efforts more effectively. This exercise provides a clear account of Cornell’s rich academic environment in relation to all of the university-wide goals. It also allows more efficient analysis at the institutional level, pointing to areas in need of strengthening and opportunities for greater collaboration or enhancement across units and programs.

Assessment Within the Colleges

At the level of undergraduate education, the academic goals related to the majority of majors and programs have been articulated in assessment plans. Further, at least 81% of more than 70 undergraduate majors at Cornell have

developed assessment plans, and many of these plans have been implemented. In the colleges, program-level assessment plans and changes made as a result of assessment are all tracked on secure websites accessible to faculty in that college. These sites are accessible to Middle States reviewers, as described in the cover letter for this report from President Skorton. Table 3 reflects a typical assessment progress report.

Table 3. Example Assessment Progress Report: Food Science (FDSC 3950), Food Microbiology Laboratory

Outcome Measured:	To formulate a hypothesis and propose a protocol to test a microbial problem found in the scientific literature
Methods of Assessment:	<ul style="list-style-type: none"> • Project proposal • Determination of the materials needed for the experiment • Performance of the experiment • Oral presentation of project results • Term project written report
Summary of Key Findings:	<ul style="list-style-type: none"> • Students show good mastery of PowerPoint presentations, oral and written skills • All students were able to integrate basic microbiology knowledge into an independent research project • Students could test hypotheses with appropriate experiments • Grades of final project of 92-98/100 reflect accomplishment of the learning outcome

Consistent with the decentralized nature of our institution, the individual colleges have established structures for review and continuous improvement to support student learning: some have standing committees; others have mechanisms within the academic departments for regular review and communication about assessment. To foster communication about assessment within and across colleges, assessment workshops for faculty offered by the Center for Teaching Excellence have drawn roughly 75 participants from different colleges throughout the year. In addition, approximately 100 faculty who serve as Directors of Graduate Studies participated in a series of focused workshops given by Barbara Walvoord, a nationally recognized expert in the area of assessment. And across campus, there is a growing interest among faculty in the use of ePortfolios, as a means to better capture a range of learning outcomes.

As documented on internal websites, many faculty changed courses and programs based upon the results of their assessment plans. Representative changes include revisions to individual courses, changes in prerequisite requirements, and changes to requirements for a program or major. In addition, the reflections and discussions among faculty that assessment efforts have prompted have helped them to identify broader goals for student learning, goals that previously may have not been articulated. These discussions have generated new programs, courses, majors, and approaches to teaching aimed at improving student learning.

Especially noteworthy changes based upon assessment results are reported in the deans' annual reports to the provost, which now emphasize reporting related to assessment activities. A sampling of these changes include the development of new undergraduate majors and several new capstone courses, the development of rubrics to track progress toward programmatic goals based upon student learning outcomes, revisions to administrative processes for developing new courses, and better follow up with graduating students in the form of exit interviews. Each of the colleges has taken a slightly different approach, appropriate to its mission and goals. However, the end results of these efforts across campus continue to foster a commitment to continuous improvement and a push for excellence. Examples of activities related to assessment within the colleges are summarized below.

Agriculture & Life Sciences

All programs and majors within the College of Agriculture & Life Sciences (CALs) have developed assessment plans and have implemented them, and annual reports were submitted to the college for 21 of the 24 majors during spring 2012. Proposals for new courses must now include learning outcomes, along with an explicit link to the college-level goals. Further, in spring 2013, CALs is implementing a revised instructor/course evaluation form that includes new questions specifically about course learning outcomes.

Specific changes based upon assessment efforts include a new course on leadership and the addition of a new college-level learning outcome related to the sustainability of natural resources. Six majors have created new capstone courses, and others have instituted an internship requirement. Many individual courses across CALs have been revised. For example, the major in Viticulture

and Enology identified the need to develop new courses in winery business management and community relations, and the major in Atmospheric Science is initiating an annual undergraduate research symposium. Partly due to assessment efforts, faculty realized that substantial overlap existed in the majors of Natural Resources and Science of Environmental Systems; therefore, these two majors are being merged. In response to feedback from the CALS Advisory Council (mostly alumni), the CALS Curriculum Committee is discussing how to better prepare students to learn and acquire professional (soft) skills. Several majors are initiating exit interviews with graduating seniors.

Arts & Sciences

In the College of Arts & Sciences, programs and majors have taken different approaches to assessment activities using mechanisms best-suited to their contexts. For example, the Department of Economics has appointed a faculty member to serve as coordinator of assessment activities; History has appointed a committee of faculty to meet regularly to review assessment results. Faculty in Physics have implemented a series of pre- and post-tests in their introductory course sequences, as well as several tools for assessing student progress in their graduate program. History of Art has made changes to several courses required of the major based upon assessment activities, including a two-phase writing assignment originating in the sophomore year and ending in the senior year. Some departments, such as Sociology, have found some aspects of their assessment plans to be more fruitful than others, and will be revising their indirect assessment strategies due to low response rates to surveys they developed. Departments such as Math and Economics (see example in Table 4) have focused on assessing specific program-level objectives, while programs like Asian Studies have taken more holistic approaches to course assessments. For every course taught in this program, faculty have examined how it contributes to the curriculum, its pedagogical goals, how they are pursued and assessed, and what resulting changes may need to be made. Nearly three-quarters of all programs and majors have developed assessment plans that are posted on the college Blackboard site; half have implemented their plans and posted results and changes made.

Table 4. Example Assessment Progress Report: American Economic History (ECON 3240)

Outcome Measured:	Adapting familiar concepts to novel, or more complete, problems.
Methods of Assessment:	Focusing on two important economic concepts, faculty identified historical issues to which those concepts were relevant and designed specific test questions to assess student understanding of them. Students' answers were scored according to a rubric, and faculty reviewed the results, along with students' evaluations of the course.
Results:	Most students are attaining the first learning objective, but a significant minority are not. Faculty were surprised to learn that the same students had little or no command of the second concept.
Changes made	The course syllabus has been revised to include a clear statement of learning objectives. Class material has been revised to devote more time to review of basic concepts and demonstrating how they apply to historical issues. Faculty are also considering developing a homework assignment or worksheet to supplement examples worked in class and applications in the assigned readings

Architecture, Art & Planning

All three departments in the College of Architecture, Art & Planning have begun work on learning assessment. The Department of Architecture is mapping the material from the cyclical, rigorous, and ongoing review process mandated by the National Architectural Accrediting Board (NAAB) to align with other college efforts in compliance with Middle States expectations. The Department of City and Regional Planning has developed a set of learning outcomes for the Urban and Regional Studies (URS) major, and course level learning objectives and an assessment plan for the URS major are currently being developed. Faculty in the Faculty in the Department of Art have incorporated four core components of learning into all 3000-level courses, in addition to using innovative teaching approaches (such as a student blog) to better achieve stated learning objectives.

Engineering

In the College of Engineering, most departments have well-established assessment practices tailored to their own programs and used for continuous improvement. The Accreditation Board for Engineering and Technology (ABET) requires all accredited departments have a documented process for continuous improvement and rubrics for measuring the effect of changes made. Seven of the college's 11 majors are ABET accredited. The college's four majors that are beyond the scope of ABET accreditation have also developed assessment plans, reflecting their respective priorities and goals.

One example of the result of a non-ABET department's assessment process in a course is ENGRD 2640: Computer Instrumentation Design. This course has a large enrollment and includes many students in other engineering majors because it is one of the few College of Engineering distribution courses that may be used to satisfy the college's technical writing requirement. Several faculty members from the department of Applied and Engineering Physics (AEP) participated on a committee to redesign the course. Their assessment of ENGRD 2640 was that the course had become too strong in physics for the level of the students taking it, and as a result, its technical writing component was less effective than it should be. They decided to take the course off the roster for a year to allow a professor with expertise in the area of instrumentation to redesign the relevant material so that it was at a level appropriate for most students in engineering. As a result of these extensive course revisions, new instrumentation was purchased, partly by funds from a McCormack teaching grant, to build 20 student instrumentation stations. The new version of the course was offered this spring. The committee plans to follow up with an assessment of the effectiveness of the changes.

Hotel Administration

In the School of Hotel Administration, faculty have created 4-8 learning objectives for every core course, and mapped them against four program-level objectives. They created rubrics for five program-level objectives that identified key competencies required of all graduates, and established a timeline for review of all program-level objectives for undergraduate and graduate programs. Faculty also meet to discuss results of assessment; as a result of these

deliberations, the goals for the Master of Management in Hospitality degree program were modified to better align with the school's mission and vision.

Human Ecology

As a result of a review of courses in the College of Human Ecology, new courses were developed in several areas, and a new major in Global and Public Health Sciences was established. A college Blackboard site includes assessment plans for every department but one, a matrix of courses by learning outcome, and annual reports from all assessments. A majority (79%) of courses have posted learning outcomes in their departments; 82% of courses list learning outcomes on their syllabi. More than one third of the courses have filed assessment data in their departments. To facilitate faculty members' assessment efforts, an online tool helps them record and share assessment data with others in their department (see Figure 5, below). Learning assessment activities are a clearly articulated expectation:

Dear PAM [Policy Analysis and Management] Faculty,

It is time to begin Learning Assessment for the spring semester.

Learning Assessment is required for all PAM undergraduate and Sloan classes. If all goes well this should take you less than 10 minutes per class.

Ideally you will begin Learning Assessment now, and complete it at semester end. I will remind you about learning assessment again just before final exams, and follow up afterwards.

The following are the directions (don't hesitate to contact me if have difficulties or the system does not work properly).

Regards,

Tom

Senior Lecturer, Director of Undergraduate Studies
Policy Analysis and Management
Cornell University

Figure 5. Instructions for Faculty Using the College of Human Ecology's Learning Outcomes Tracking System.

- 1) Click on this link:
<https://registrar.human.cornell.edu/Instruction/CLAhome.cfm>
- 2) At the blue screen, click on the tab "CLA Add/Edit Form."
- 3) In the left panel you should see course information for all classes you are teaching, or have taught, in PAM. At the bottom left are arrows to scroll through these classes. **Scroll to one of the classes you are teaching this semester.**
- 4) In the right panel are the assessment areas. (If you place your cursor over the blue question marks additional explanation will be displayed.)
 - a. Click "**Dept Assessment**" at the top. Now click on ALL items that are relevant to your class, even if you aren't going to do an assessment on it. Click "**Update Record**".
 - b. Click the "**Learning Assessment**" tab at the top.
 - c. Near of the top of the "**Learning Assessment**" tab are two drop-down menus. For each of the two drop-down menu select the one category that best describes the item on which you will complete Learning Assessment.
 - d. In the "**Learning Outcome/Objective**" field describe the skill or competency you will be assessing.
 - e. In the "**Assessment Method(Indicator)**" field explain how you will be assessing students. For example, questions on exams, homework, essays, class presentations, etc.
 - f. Click the "**Save Record**" tab at the bottom now. If you try and navigate away from this page before saving you will get an error. Also, if you try navigating away before completing the two drop down menus and the two fields, you will get an error.
 - g. This is the minimum that be completed now for this class.
 - h. If you want to complete Learning Assessment on a second topic for this class, click the "**New Record**" tab at the bottom right and repeat steps b) through g).
- 5) Use the arrows on the bottom left panel to go to your next class. Repeat the steps in 4).
- 6) At the end of the semester you will need complete the two bottom fields: "Assessment Results(Findings)" and "Improvement Plan (Response)." I will e-mail you during the final exam period to remind you.

Industrial & Labor Relations

Written expression, a college-level learning outcome that is assessed across courses, has been a recent focus for faculty in the School of Industrial & Labor Relations. As a result of their efforts, faculty identified necessary changes to bring about improvements, and are in the process of implementing them.

Graduate and Professional Schools

Similar progress has been made in the graduate and professional schools. Assessment plans have been developed for every degree program (nearly 100) in the Graduate School. Each graduate degree program posts its assessment plan publicly, including specific learning outcomes, under an “Assessment” tab on the Graduate School catalogue pages, as illustrated in Figure 7 for the graduate field of English Language and Literature.

Figure 7. Graduate Assessment Plan for English Language and Literature as Displayed on the Graduate School Website.

The screenshot displays the website interface for the English Language and Literature department. On the left is a navigation menu with categories: 'Fields of Study' (containing 'List of Fields' and 'Catalog'), 'Faculty', 'Graduate Degrees', 'Research and Scholarship', 'Learning Assessment', and 'Field Metrics'. Below this is a section for 'students and faculty' with links to 'Academic Calendar', 'Commencement', 'CU-CIRTL', 'Events Calendar', 'Forms', 'Requirements', and 'Policies'. The main content area is titled 'English Language and Literature' and features a dropdown menu set to 'English Language and Literature'. Below the dropdown are five tabs: 'APPLYING', 'DEGREE INFORMATION', 'DESCRIPTION', 'FACULTY', and 'ASSESSMENT', with 'ASSESSMENT' being the active tab. Under the 'Graduate Assessment Plan' heading, there is a paragraph of text describing the department's commitment to diversity and its PhD program's structure, including a link to 'Learn more about the graduate field of English language and literature assessment plan.'

Each assessment plan includes a statement of learning outcomes and a description of direct and indirect measures used to assess them (see Appendix C for an example from the graduate field of English Language and Literature). Every graduate field is required to report to the Graduate School the results of their assessment efforts every two years, noting the learning outcomes measured, the evidence considered, the conclusions drawn from the evidence, and changes made or planned based on the results.

In addition, the Graduate School has implemented analytical tools to support the assessment efforts of the graduate fields. A set of graduate field metrics for each graduate field is available publicly at www.gradschool.cornell.edu/academics/field-metrics. These metrics include admissions selectivity and yield, Ph.D. completion and attrition rates, median time-to-degree, and job placement data. More detailed information is available to all graduate fields on a password-protected intranet, allowing fields to compare their metrics with other fields, and within their overall disciplines at Cornell. An example is the “Milestone Exam Details” metric report (see Figure 8) with information about candidacy and final exams passed or failed by each student, including measures of time-to-exam relative to graduate program requirements, and sortable by several parameters to aid analysis. Field metrics, with other information, are used as the basis for individual biennial field meetings held by the Graduate School leadership with the Director of Graduate Studies for each graduate field.

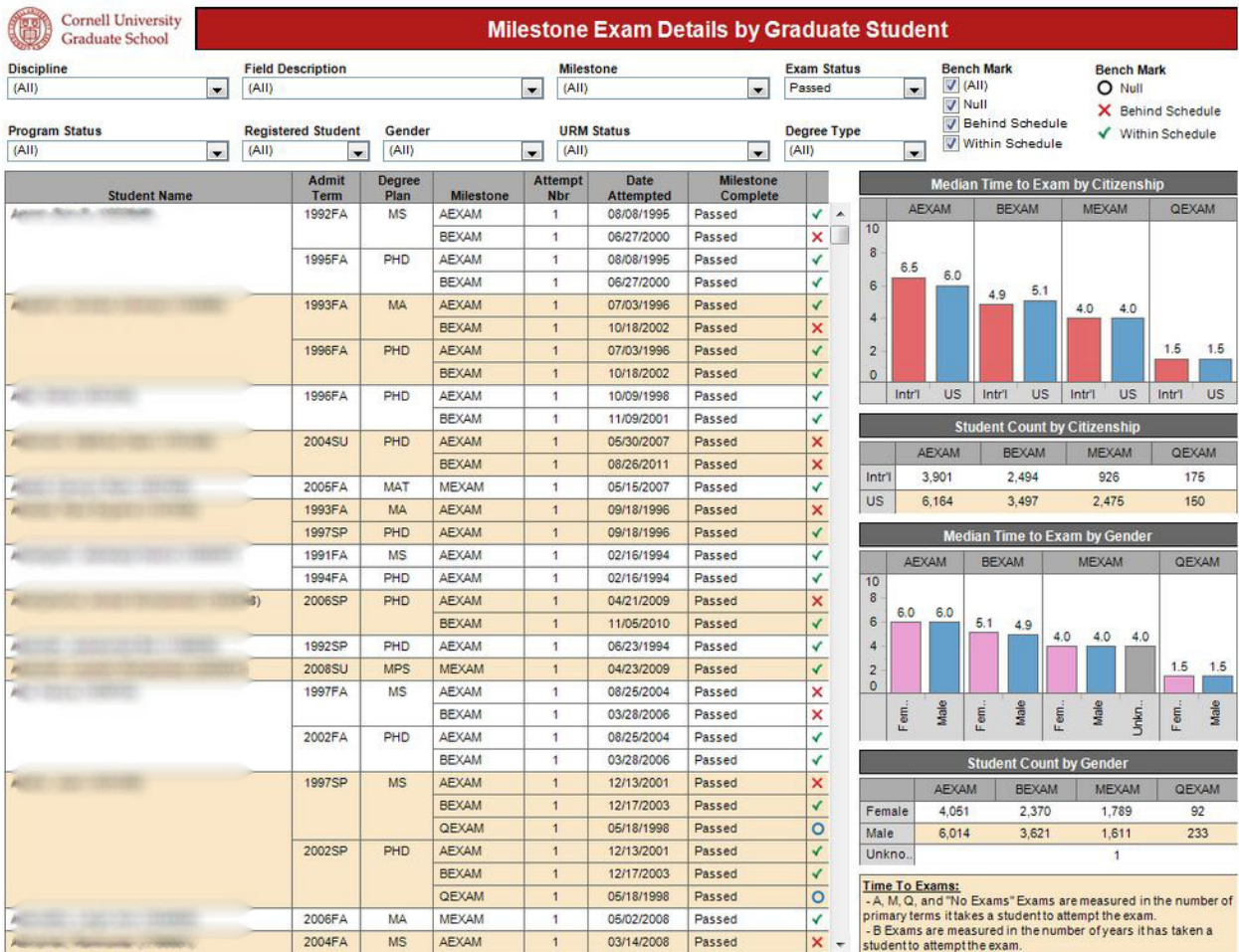
The Graduate School has also implemented a series of survey tools to provide consistent indirect measures of student outcomes, including an exit survey administered to each graduating student. Graduate School-level outcomes are assessed indirectly with surveys for masters level and Ph.D. level students (see Appendix D).

At Weill Cornell Graduate School of Medical Sciences, a systematic program of student learning assessment has been developed over the past six months. As part of this process, student learning goals have been formalized and select outcome measures have been identified at both the school and program level. The school has instituted an annual learning assessment review process, which will include a review of the overall approach to learning assessment.

The four professional schools (Johnson Graduate School of Management, Law School, College of Veterinary Medicine, and Weill Cornell Medical College) are subject to regular, rigorous accreditation processes by outside agencies, all of which require assessment, evaluation, and continuous improvement of the program. In all four cases, faculty committees are charged with overseeing curricular offerings, developing assessment methods, reviewing results, and ensuring that course and curriculum revision occurs to improve outcomes. For example, in the Johnson Graduate School of Management, assessment of student

learning is the responsibility of the Johnson Learning Goals Committee, which has established a progressive system to draft, test, implement and update assessments and feedback loops for each program-level learning goal for their four MBA programs.

Figure 8. Graduate Student Milestones Exam Details Report Excerpt



Assessment in Major Service Courses

University, college, and program learning outcomes depend to a significant extent upon entry-level courses (or 'service courses'), which build essential skills and introduce foundational materials and contexts upon which subsequent disciplinary learning depends. We have prioritized assessing student learning across these courses; it is through them that many of the institution's general education goals for student learning are met.

Undergraduate enrollment in the relatively small number of courses that support many programs across a range of colleges and schools at Cornell is significant. Excluding the First-Year Writing Seminar required of all students, in Spring 2012, 5800 students were enrolled across the courses listed below; enrollment in Fall 2012 was 7400.

Table 5. Enrollments in Major Service Courses

Discipline	Course Numbers	Total Enrollment (S'12 and F'12)
Knight Institute, First-Year Writing Seminar	Various courses by department	5444 <i>(all first-year students)</i>
Biology	1105, 1106, 1440, 1350, 1610	1967
Chemistry	2070, 2080, 2090, 2510, 3570, 3580	4713
Economics	1110, 1120	2205
Mathematics	1110, 1120, 1910	1398
Sociology	SOC 1101, RSOC 1101	1243
Communication	2010	483
Physics	1101, 1102	576
Psychology	1101	623
Statistics	PAM 2100, AEM 2100, ILRST 2100, STSCI 2100	1704

Our approach to the assessment of student learning within these service courses has been consistent with our institutional philosophy to allow faculty to assess student learning outcomes in the manner most appropriate to their educational contexts.

The Core Assessment Committee (CAC) has established that “all colleges and schools accept a shared responsibility for ‘service courses,’ in the sense that it is the responsibility of each college and school to provide for assessment of service courses that it offers. . . . The particular departments/ programs . . . that offer these courses will be responsible for assessing the courses.” In the case of the Knight Institute for Writing in the Disciplines, which offers the First-Year Writing Seminar required of all Cornell undergraduates, the CAC has specified

that, “because of its interdisciplinary nature, [the Knight Institute] will provide an assessment plan that is operative within the program itself but that also engages the departments where its courses are offered.” In this section, we look more closely at the service courses, and focus on recent assessment activities in two: the Knight Institute for Writing in the Disciplines, which offers the First-Year Writing Seminars, and Introductory Biology, which supports the largest undergraduate major at Cornell.

First-Year Writing Seminars

The Knight Institute for Writing in the Disciplines offers the university’s core introductory course in critical writing skills, required of all first-year students—the First-Year Writing Seminar (FWS), which directly supports the following university-wide learning outcomes, as well as all the college learning outcomes related to **critical thinking** and **communication skills**.

The FWS Program offerings are diverse, since they are based on developing students’ writing and analytic skills in the context of disciplinary study. Each semester, over 100 different courses are taught in more than 30 departments and programs located in the humanities, social sciences, expressive arts, and sciences. These individual departments and programs offer and manage the courses, which all follow a set of common guidelines. Instructors are expected to extend and adjust these general goals in relation to their particular disciplines and topics, and are provided with appropriate models.

In Spring 2012, the FWS Program designed an extended rubric for program-wide assessment, “Rubric for Rating ‘Suitability to the Field/Occasion’ in First-Year Writing Seminars.” In Fall 2012, the program directors implemented a process that utilized this rubric to evaluate sample essays, refine the assessment process within the Knight Institute, and conceptualize the relationship between this particular service course and the programs that it serves across the university. A group of evaluators read and discussed sample essays from selected First-Year Writing Seminars in Anthropology and German Studies, including five essays each from five representative assignments. These included both academic and more flexible or “creative” papers. The assignment prompts were circulated in advance, and for each assignment the readers agreed upon a common set of learning outcomes that elaborated the “suitability to the discipline” rubric defined in the extended FWS rubric, mentioned above.

This assessment process and the resulting discussion highlighted the differences in the design of writing assignments, the difficulties involved in shifting from one discipline to another in this process, and the importance of disciplinary expertise in assessing learning in this discipline-grounded program. The group found that the more explicitly a learning goal was stated in the assignment prompt, the more focused and coherent the essays were. The Knight Institute's training seminar (required of graduate student instructors) directly takes up the design of writing prompts and the importance of shaping them in order address learning outcomes. This assessment process highlights the significance of and encourages further attention to this aspect of the course design and instructor training.

Most important, this assessment process resulted in two significant conclusions for refining future assessment activities, and for conceptualizing the FWS assessment plan in relation to the university's undergraduate programs. First, the process served to highlight the intersection between learning outcomes directed more generally at **critical analysis and writing skills**, on the one hand, and those directed at particular **disciplinary understanding**, on the other. The group affirmed that the First-Year Writing Program at Cornell is a disciplinary learning experience, which is most effectively defined and assessed in concert with the faculty within the particular discipline involved. The group concluded that the FWS assessment plan, while sponsored and organized by the Knight Institute, should be recreated as a collaborative process between the Knight Institute and the individual disciplines upon which the program's courses are based. Future assessment activities will be focused on one department (or program) at a time, rotating through disciplines annually, and the process should directly involve faculty specialists within the discipline, including faculty members not directly engaged in FWS instruction.

Second, the group argued that by working with the departments or programs and engaging those departmental faculty not currently teaching the writing course, "the explicit attention given to learning outcomes in First-Year Writing Seminars could percolate 'upward' into the curriculum, with beneficial effects on the pedagogical environment across the board." The Knight Institute fosters a course structure in which the desired outcome—the kind of analytical writing or mode of **critical thinking** skill that the instructor seeks to teach—is systematically "reverse engineered" into assignment sequences that lead to that

end. Thus the instructor in the FWS builds learning outcomes into his or her conceptualization of writing activities for the course, and then can subsequently adjust those activities based on the writing that students produce. For those programs participating in the First-Year Writing Program, the sequence—articulating outcomes in relation to a specific rubric, creating occasions where learning takes place and is demonstrated, assessing the students’ outcomes in relation to the rubric, and then re-designing the sequence of writing activities in light of that assessment—can serve as the base model for an ongoing assessment process that extends through the learning outcomes of the major.

Data from the Senior Survey provide valuable indirect evidence of learning “downstream” of the First-Year Writing Program, as well as a basis for comparing learning outcomes across majors. For example, 94% of Cornell graduating seniors indicated that they made at least “some” development gains in **“writing clearly and effectively”** and more than two-thirds indicated that they improved “quite a bit” or more. In addition, 92% of respondents made at least “some” development gains in **“communicating well orally,”** and two-thirds indicated that they improved “quite a bit” or more.

The following appendices provide additional detail:

- Appendix E: Assessment Report Fall 2012—First-Year Writing Seminar Program
- Appendix F: Rubric for Rating “Suitability to the Field/Occasion” in First-Year Writing Seminars

Introductory Biology

The Introductory Biology curriculum serves majors in four colleges and has an annual enrollment of approximately 2000. Recently reviewed and substantially revised in regard to course content and course requirements (2008-10), the curriculum is currently under review as part of a major new initiative in support of pedagogical innovation (2013-15). To support and continue to improve the Introductory Biology Curriculum, the Biology Curriculum Assessment Committee (BCAC) was established in Fall 2010. The committee meets four times a year and is charged with collecting and tabulating data, reviewing findings, sharing information gathered with the Biology Curriculum Committee, and submitting recommendations for changes to the Director of Undergraduate

Biology. The BCAC has defined learning goals and has created an assessment process in which a specific goal or goals are targeted annually, relevant data are defined and collected (using both direct and indirect methods), outcomes are analyzed, and changes are recommended. These data are then supplemented by responses to the Senior Survey. At present, students' performance on exam items that require quantitative skills are being recorded for further analysis in two courses (Biochemistry and Evolution). The BCAC assesses all four of the courses in the Introductory Biology Curriculum each year. Examples of some of the recent changes made as a result of assessment include:

- **BioG 1500 – the Investigative Lab.** The number of laboratory modules has been reduced from four to three to better manage student workload and provide greater opportunity for students to master the scientific process. In response to student data that suggested a lack of preparation for the independent experiment design, an introductory module was developed that gives students practice in formulating hypotheses, making scientific observations, and designing experiments with appropriate controls. In response to a concern that students' writing skills needed improvement, an additional lab report was introduced. This resulted in improvement in students' writing scores on the second lab.
- **BioG/BioMG 1350 – Introductory Biology: Cell and Developmental Biology.** Input from the personal response system used in the course has been used to revise lectures and to change section activities.
- **BioG 1440 – Introductory Biology: Comparative Physiology.** The course is evaluated through opening pre-test questions, i-clicker questions, and exams. Students are surveyed in relation to the course learning objectives, as well as through exams.
- **BioEE 1610 – Introductory Biology: Ecology and the Environment.** The course is evaluated through student evaluations, instructor and TA observations, and i-clicker information. Instructors are seeking to improve the section activities to increase the inclusion of smaller, focused writing tasks.

Data from the 2012 Senior Survey relevant to these outcomes provide additional points of comparison. Among graduating CALS seniors majoring in Biology, 93% indicated their **understanding of the process of science and experimentation**

had improved “quite a bit” or “very much.” A clear majority (81%) of the graduating Biology and Society majors in Arts and Sciences answered similarly, compared to 66% of all graduating seniors at Cornell. Students majoring in Biology and those majoring in Biology & Society also reported similar, significant gains in their **ability to use quantitative reasoning and methods**. For Biology majors, 86% indicated their understanding had improved “quite a bit” or “very much,” while 76% of Biology & Society majors felt similarly. Interestingly, a larger percentage of Biology & Society majors (48%) reported the biggest gains, compared to 37% of Biology majors.

Appendix G (Progress Report for the Assessment of the Introductory Biology Curriculum, October 2012) provides additional detail.

One University: Educating the Whole Student

Because Cornell students learn in a variety of ways and contexts, assessment of the university’s learning goals includes information from multiple sources. These include student involvement in activities such as traditional classroom learning, special projects, involvement in research, public service and community engagement, and leadership and participation in a wide range of organizations. Further, in an effort to foster deliberate, connected learning, a number of campus initiatives have intentionally blurred the boundary between the formal classroom, the university as whole, and the surrounding world. As illustrated by the matrix, the number and diversity of programs that contribute to student achievement of the ‘non-cognitive’ learning goals is exhaustive. For example, the living/learning environment supported by the West Campus House System described above includes a great deal of programming related to multicultural competence. Many are formal lectures, but some are social events, such as cultural celebrations. The outcomes of these activities are captured in campus surveys, providing indirect evidence of student learning. Focusing on two of these university goals, **multicultural competence** and **community engagement**, the examples below illustrate the synergy and compatibility between formal courses and co-curricular activities, and describe how learning—in all its forms—is assessed.

In the colleges, efforts to address the university’s goal for **multicultural competence** include: increasing undergraduate requirements to include courses on cultural diversity; encouraging students to participate in Study Abroad and

exchange programs; requiring or awarding academic credit for internship experiences; developing new courses based upon the service learning model; offering certificate programs in international engagement and other programs off-campus; and expanding the number of exchange partners around the world, not only to provide our students opportunities to study abroad and immerse themselves in other cultures, but also to bring international students to our campus to enable our students opportunities to interact with students from other cultures.

On campus, the list of academic diversity programs for undergraduate students is extensive, and is available in a document titled *Diversity and Inclusion Resources* (attached). The Dean of Students Office also sponsors many campus-wide programs and services aimed at cultivating the university's values, including our commitment to diversity and inclusion. In addition, each of the colleges also offers a range of programming. To promote students' development and understanding of diverse cultures and a global perspective, the scope of many programs transcends the boundaries between the formal curriculum and co-curricular activity. One example is a new campus initiative, the Program on Intergroup Relations, which has developed a new course, *The Intergroup Dialogue Project (EDUC 2610)*, that aims to help undergraduate students develop conflict and dialogue group facilitation skills, increase awareness of diversity and intergroup issues, and make a positive impact on the campus community. Students earn academic credit serving as facilitators of intergroup dialogues; they are enrolled in a formal course taught by a faculty member during the semester in which they facilitate and in a training seminar the semester prior to facilitating. The students in each of the dialogue sections meet weekly throughout the semester, and end by creating a common project designed to make use of the valuable knowledge and insights gained from one another and from the readings, assignments, and activities of the dialogue section.

The division of Student and Academic Services (SAS) offers many programs that have a profound impact on students' development in the co-curricular areas of community engagement and multicultural competence, which are demonstrated through the results of assessment practices. For example, Tapestry of Possibilities, offered during New Student Orientation each year, consists of a thought-provoking performance by the Ordinary People student theater troupe,

followed by a post-performance discussion that is moderated by Cornell administrators, faculty, and staff members. Using skits that are written by student members of the troupe, Tapestry of Possibilities introduces new Cornell students to Cornell’s values of diversity and inclusion, offers them the opportunity to reflect, and invites them to participate in a dialogue about ways people from different cultural backgrounds or who hold different values or belief systems can coexist in a respectful, collaborative, and celebratory manner. The program administers a survey to approximately 4000 freshman and transfer students to assess the degree to which the program accomplishes its mission to increase self-awareness with regard to personal perspectives and values, as well as awareness and sensitivity to the perspectives and values of others. The survey results generally indicate that Tapestry is achieving its goals, as illustrated in the table below. (Data are presented for 2011 and 2012. The number of respondents in 2012 was unusually low, due to technical issues.)

Table 6. Findings from the 2011 and 2012 Tapestry Assessment Surveys

Statement	Percent who say they “Agree” (A) or “Strongly Agree” (SA):	
	2011 results	2012 results
[Tapestry...] Increased awareness of issues related to diversity is important to my overall education.	47% A 41% SA	46% A 44% SA
This program has increased my awareness that the things I believe are not necessarily the same things other people believe	57% A 17% SA	51% A 25% SA
This program has made me more aware of the dynamics that can occur when individuals with different backgrounds interact	62% A 23% SA	57% A 31% SA
This program has made me reflect on how I interact with individuals of backgrounds different than my own	61% A 23% SA	58% A 29% SA

Note: The 2011 survey had 1051 respondents. The 2012 survey had only 375 respondents due to a technical problem in survey administration.

SAS in is the process of developing a division-wide student learning outcomes assessment program that will allow more uniform reporting on student learning outcomes achieved through its programs. To better assess the learning goal of multicultural competence, staff members in the division of Residence Life plan to conduct targeted assessment of “signature” house programs in three of the

Program Houses (Ujamaa, Latino Living Center, and Holland International Living Center).

Additional examples of programs for which robust assessment plans are being developed and data are being collected include Meal Time as a Cultural Experience – a co-curricular partnership with a faculty member in the Department of Food Science. *A Good Meal, A Window Into Diversity (FDSC 1943)* consists of classroom instruction related to cultural meals, followed by a meal. Formal instruction is followed by a tangible experience, involving faculty from across the university, to reinforce learning about other cultures.

Responses to the Senior Survey demonstrate that 94% of Cornell graduating seniors say they made at least “some” development gains in “**relating well to people of different races, nations and religions,**” while more than two-thirds (70%) improved “quite a bit” or more. Similarly, when asked “As you think about your future, how important is each of the following to you?” 89% of Cornell seniors indicated that “**getting to know people from diverse backgrounds**” was at least “somewhat important,” while 57% indicated it was “very important” or “essential.”

The university’s learning goal for **community engagement** is achieved and assessed through a variety of mechanisms, which are increasing in number as more faculty adopt a service learning model, linking academic learning with meaningful community service activities, personal growth, and social awareness and responsibility. Programs within and beyond the colleges provide students many opportunities to participate in activities that foster learning in these areas. For example, the School of Industrial and Labor Relations offers a range of programs related to global engagement; the College of Human Ecology offers an Urban Semester; students in the College of Agriculture and Life Sciences may participate in an internship program that connects coursework, career and community at a number of locations in New York state. Additional representative programs are described below; a more comprehensive list is inventoried in a recent university report titled *Public Engagement Data and Information*.

One key university program supporting goals for both **community engagement** and **self management** is Notice and Respond, a community-based approach to student mental health aimed at helping students, faculty and staff learn: how to

identify signs of distress in others; how to respond; effective communication strategies; and about campus resources for consultation and referral. A joint effort by Gannett Health Services and the Dean of Students Office, Notice and Respond offers educational programs and materials on student mental health and well-being. The effectiveness of these programs is assessed through a variety of mechanisms, including changes in students' help-seeking behavior, referrals, and participation in campus programs or services. The Dean of Students Office also assesses students in various leadership roles, such as Resident Advisors, student managers in the community centers, and those who serve as members of the judicial Peer Review Board.

Engaged Learning and Research (ELR) aims to advance academic service learning, community-based research, and public scholarship across a wide spectrum of academic disciplines and programs. ELR administers Cornell's NYC Urban Scholars Program, which introduces undergraduate sophomores and juniors to the urban problem-solving and community-building efforts of New York City's most innovative non-profit and government agencies serving low-income children, families, and communities. The primary purpose of this program is to encourage Cornell undergraduates to pursue public careers with agencies engaged in direct service and policy change efforts affecting low-income children, families, and communities upon graduation. Students maintain electronic portfolios to document their learning, and take pre- and post-fieldwork courses in which learning is assessed based upon ratings from rubric-based writing assignments. Affiliated with several programs and units on campus, ELR also serves as a focal point and clearinghouse for information about courses, opportunities and resources on campus. For example, ELR has compiled a list of courses related to community engagement, located at:

ccelr.cornell.edu/content/engagement-curriculum

ELR collaborates with and supports a wide range of programs across campus. Some are partnerships with colleges. Two examples with ILR are the global Swami Vivekananda Youth Movement program which takes students to India, and Buffalo High Road aimed at urban revitalization. The Auburn Prison Education Program is offered in collaboration with faculty in Arts and Sciences. ELR also collaborates with the Public Service Center (PSC), which sponsors the PSC Scholars, a program for undergraduates designed to promote scholarship and service that is responsive to the concerns of the community and contributes

to the common good. The PSC Scholars attend courses that inform their work with communities and create electronic portfolios that relate to specific learning outcomes.

The mission of the Cornell Alternative Breaks Program, also managed by the Public Service Center, is to promote service learning through direct public service with various communities to heighten social awareness, enhance personal growth, and advocate lifelong social action. Students participate in projects focusing on issues that include urban poverty, hunger, housing, domestic violence, commercial sexual exploitation of youth, homelessness, educational reform, labor issues, HIV/AIDS, environmental damage, and LGBTQ youth homelessness. The program utilizes both direct and indirect methods for assessing student learning outcomes: surveys and interviews of program participants provide quantitative and qualitative information. Participants are also required to keep reflection journals before, during, and after their trips, and they must give presentations about their experiences.

Cornell University Sustainable Design (CUSD) promotes education through action, empowerment, and innovation with several design-build projects. Students involved in CUSD participate in projects improving water quality for rural communities, or solar, geothermal, hydropower, or other sustainable technologies for managing natural resources. Initiated as a student project team in 2010, CUSD's sustainable research facility now includes more than 60 students and a dozen faculty and professional staff. Students record their learning through blogs and a website. Participants are currently managing two design-build projects, one each in Africa and Nicaragua. CUSD is currently conducting interviews to gather data from their students, faculty, and community partners to assess the impact of the program.

In recent years, **community engagement** has been a visible theme in university communications and in new initiatives and programming. The Senior Survey data demonstrate that more than 94% of Cornell seniors reported some form of engaged learning experience, across all colleges. About two-thirds of these experiences are internships, research, or community service; roughly half of students report an international experience. Internships are most common in Hotel, followed by ILR. About half or more of students in nearly all colleges had an international experience. International experiences were more common in AA&P, and least common in Engineering. While only 21% of Cornell seniors

reported that “participating in politics or community affairs” was “very important” or “essential,” 82% indicated that they felt “being a leader in my community” was at least “somewhat important,” while 45% indicated it was “very important” or “essential.”

Additional documentation is available in Appendix H (Diversity and Inclusion Resources).

Conclusion

In 2011, our evaluation team recognized that Cornell had already made a “significant effort to develop a ‘culture of assessment’ over the last year.” This progress report provides clear assurance and documentation that we have, in fact, carried out our “plans for implementing a systematic and sustained culture of assessment.”

There is no doubt that our institutional assessment efforts have become more systematic, higher profile, and more influential on the concrete operations of the university in the two short years since our accreditation visit. We remain focused on assessing our progress on our strategic plan, and we are prioritizing data and analyses to both *support* the new budget model and *evaluate its impact* on the university. Real investments of resources, both centralized and unit-based, have supported this work and ensured its institutionalization.

Similarly, as noted in the evaluation team’s report in 2011, the university was already taking the process of assessing student learning seriously two years ago:

There is already strong indication that the process of developing learning goals and outcomes has had a positive impact on departments’ curriculum design and development efforts.

In this area as well, considerable activity has occurred since our visit on all levels and within each of the colleges and schools. While it is difficult to document the full breadth of this activity within the scope of a single report, it should be clear that each of Cornell’s colleges has established a framework for assessment of student learning activities that appropriately reflects their own cultures and disciplinary approaches.

The Core Assessment Committee (CAC) serves as a resource to support this work and helps to facilitate important and necessary collaborations across units. Regular, ongoing conversations within the CAC have been very valuable in helping us to move individual colleges and units forward, allowing us to leverage best practices and to coordinate our efforts to increase efficiency. Further, as a committee, we assemble the pieces that together document the degree to which Cornell students have achieved the full range of articulated learning goals. The work of the CAC has resulted in shared understanding and

collective problem solving and has fostered a team approach that helps us to promote and enhance student learning throughout Cornell University.