CORE COMMITMENT TO EDUCATIONAL EFFECTIVENESS

The institution evidences clear and appropriate educational objectives and design at the institutional and program level. The institution employs processes of review, including the collection and use of data, that ensure delivery of programs and learner accomplishments at a level of performance appropriate for the degree or certificate awarded.

Handbook of Accreditation, 2008
Accrediting Commission for Senior Colleges and Universities
Western Association of Schools and Colleges

July 16, 2013

The University of California, Santa Barbara is pleased to submit its Educational Effectiveness Review Report to the Senior Commission of the Western Association of Schools and Colleges. The report confirms the campus’s commitment to WASC’s Core Commitment to Educational Effectiveness.

The Educational Effectiveness Review, the third stage of reaffirmation of accreditation, follows and builds on our Institutional Proposal and our Capacity and Preparatory Review Report. Our work was further guided and directed by the report of the Visiting Team that conducted the Capacity and Preparatory Review on October 4–6, 2011, and the WASC Commission’s action letter of March 8, 2012. These documents are available at https://evc.ucsb.edu/wasc/.

Henry T. Yang
Chancellor
University of California, Santa Barbara

Glenn E. Lucas
Executive Vice Chancellor
University of California, Santa Barbara
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II. UC Santa Barbara’s EER Report Mapped by Section to WASC’s Criteria for Review

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   a. Data Portfolio
   b. Inventory of Educational Effectiveness Indicators (7.1)
   c. Inventory of Concurrent Accreditation (8.1)
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I. Response to the Capacity and Preparatory Review Recommendations

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   ii. October 2011 Visiting Team Report
   
   iii. December 2011 UC Santa Barbara response to Visiting Team Report
   
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c. 2009 UC Santa Barbara Institutional Proposal
   
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Introduction:
Fulfilling the Core Commitment to Educational Effectiveness

Background
The report of the WASC Visiting Team that conducted the Capacity and Preparatory Review (CPR) of UC Santa Barbara in October 2011, and the subsequent WASC Commission action letter in March 2012, affirmed a number of goals this campus had set forth for its Educational Effectiveness Review. Salient among them were the completion of four departments’ pilot efforts to identify undergraduate student learning outcomes, assess their achievement, and apply the results, as well as the establishment of approved learning outcomes and assessment plans for all other undergraduate programs. These projects entail developing organizational support and cultivating greater assessment expertise and understanding of related issues within academic departments. The campus’s CPR report also outlined plans to better track the rapidly changing nonacademic career options pursued by graduates, to ensure that they are optimally prepared. The CPR Team report and Commission letter endorsed these plans as well.

The Commission also challenged the campus to extend assessment to general education, graduate degree, and co-curricular programs, and to examine support for graduate students engaged in multidisciplinary research.

Although the Commission commended UC Santa Barbara for its financial management; community relations; attention to the success of low-income, first-generation undergraduates; and program review process; the Commission also expressed dissatisfaction with the campus’s progress in articulating expectations for and assessing student learning.

This report describes the strides the campus has made to meet all of the goals set forth for the Educational Effectiveness Review (EER) and some of the thoughtful and creative ideas that are making systematic assessment of student learning an even more vital part of campus culture.

Initiatives and Infrastructure to Expand and Sustain Educational Effectiveness
Building on the self-study undertaken for the CPR, as well as on the solid foundation of systematic, evidence-based inquiry and academic rigor that characterize the university, UC Santa Barbara has launched major initiatives and strengthened existing processes to ensure that the campus regularly examines and improves its programs, practices, and allocations of resources so as to fulfill the Core Commitment to Educational Effectiveness. Of particular note are these:

Pilot Assessment Initiative

- All four pilot departments have completed multiple assessment studies and are using the results to address improvements in the programs offered by those departments. These studies have led each department to new questions that they are currently examining.

Program Learning Outcomes (PLOs)

- Faculty in every department on campus developed learning outcomes for their majors. All of these learning outcomes have been carefully reviewed and approved by the Academic Senate.
94 faculty members teaching General Education courses collaborated to develop learning outcomes for the General Education Program. These PLOs were also reviewed and approved by the Academic Senate. In conjunction with program learning outcomes for the major, these establish institution-wide learning outcomes.

All graduate degree programs have faculty-created, faculty-approved program learning outcomes. 67 (of 70) have been approved by the Academic Senate. The remaining three will be reviewed for approval in the fall.

All new degree programs are now required to have Academic Senate–approved program learning outcomes. Any proposal to change an existing program must address consequent changes to its PLOs.

Program learning outcomes are disseminated widely. They appear on the new campus assessment website and will be published in the 2014–15 online course catalog.

Assessment

Every undergraduate degree program on campus has completed plans for assessing student learning that have been approved by faculty vote.

Faculty members in 12 graduate degree programs have completed plans for assessing student learning. Faculty members in all remaining graduate degree programs are expected to submit plans by the end of Fall Quarter 2013.

A broad range of departments responded to the campus’s call for proposals to fund learning assessment projects. Five proposals were funded and are underway.

The General Education Work Group has concluded a multifaceted assessment study on the writing requirement of the General Education Program. Faculty participants contributed to the development of multidisciplinary assessment instruments.

The Office of Institutional Research, Planning, and Assessment is continuing studies of co-curricular programs to help the campus identify and refine the programs that contribute to student success.

The Division of Student Affairs has begun a division-wide assessment of the co-curricular student-service efforts of its 26 departments that will be completed in 2015–16. Goals include promoting a culture of assessment, developing staff expertise in assessment, establishing learning outcomes and assessment plans, and using results to improve divisional practice.

Graduate Education

The Graduate Division conducted a survey of students and faculty to investigate the effectiveness of interdisciplinary programs at the graduate level, which identified the pervasive reach of interdisciplinary research in graduate programs and suggested areas for improvement. Among the steps taken in response is Crossroads, a new pilot program that provides doctoral students with a year-long interdisciplinary research experience that is then extended into the undergraduate classroom through the development of new courses.

Although a majority of graduate students surveyed reported no barriers to collaborating across disciplines at UC Santa Barbara, the Graduate Division developed a range of programs to address aspects that some students said could be improved, including smoothing the way for students
working in more than one department to efficiently complete their degrees, further promoting formal and informal cross-departmental student interaction, and helping students better prepare for multidisciplinary careers.

- Statistical profiles of all graduate programs, with relevant comparable national data where appropriate, are being created by the Graduate Division and academic departments for prospective students and will be posted on the Division website.
- To ensure that students are well prepared for a variety of postgraduate occupations, the Graduate Division has launched a major effort to learn more about the career trajectories of its students.
- To enhance students’ metaprofessional skills, knowledge, and values, the Graduate Division is sponsoring more professional development workshops and resources for students, including new information on the Graduate Division website.

**Organizational Structures and Resources**

- To further ensure that critical and creative thinking about educational effectiveness informs campus decisions, Academic Program Review has been expanded to include evaluation of program learning outcomes, completed and proposed assessment studies, and consideration of longer-term career data for graduate students.
- To build capacity and support faculty in assessing undergraduate and graduate student learning, the campus has established the Council on Assessment, made up of faculty and staff members with particular expertise. Two faculty members on the Council serve as active liaisons with academic departments. Supported by the Executive Vice Chancellor, the Council has instituted an assessment grant program, brings leaders in assessment to campus, and sponsors quarterly discussions of assessment.
- To facilitate graduate program assessment and improvement, a new Associate Dean position within the Graduate Division has been created and filled.
- To provide additional expertise and technical support to faculty assessing student learning, the Assessment Research Group has been created. The group comprises two new analyst positions as well as staff from institutional research and program review. It helped form an assessment group with representatives from all UC campuses to share ideas.
- To further support the regular examination and interpretation of data on graduate student learning, the Graduate Division hired an additional institutional research analyst.

**Budget and Planning Context**

All the initiatives described above have been realized in a time of challenging budget cuts. In 2012–13, UC Santa Barbara absorbed a $6.5 million cut in state funding, following a reduction of nearly $40 million and significant mandatory cost increases the previous year. In the past 10 years, UC Santa Barbara has endured a reduction in state support and unfunded expense increases of nearly $114 million.

The campus has met these challenges by a strategic effort to reduce expenditures and increase revenues while sustaining its academic and research mission. As described in the CPR Report, in 2003 the Chancellor appointed the Coordinating Committee for Budget Strategy (co-chaired by the Executive Vice Chancellor and the chair of the Academic Senate, with student, faculty, staff, and administration members) to advise him on campus budget reduction targets and plans for revenue enhancement. Several
key ideas of the Committee has been achieved: raising assessments on non-state-funded units, imposing a tax on gifts and endowments, increasing the enrollment of nonresident students without displacing California resident students funded by the state, and increasing the indirect cost recovery rate for federal contracts and grants. Recent successful negotiations will raise this rate incrementally from the 2010 level of 51.5% to 53.5% in 2014–15. In addition, technology upgrades described in the CPR report—including new systems for electronic procurement and time-keeping, hosted calendaring and e-mail, and an improved student information system—are making the campus more efficient. The campus is also implementing a new hosted financial system, a UC-wide payroll and personnel management system, and web-based course evaluations.

Two recent developments have considerably brightened UC Santa Barbara’s budget outlook. First, the voters of California approved Proposition 30, containing two revenue-raising taxes that are projected to eliminate the structural deficit and gradually grow the State budget. Consequently, the California budget that passed in June 2013 includes an increase of 5% for the University of California, and Governor Brown has stated that he intends to continue annual increases of 4 – 5% over the next five years. Second, the University of California has devised a new formula for allocating state funding among the campuses that will mean an average increase for UC Santa Barbara of nearly $9 million per year over the next six years, a nearly $54 million increase in permanent funding by 2017–18.

The campus also expects the California Coastal Commission to approve the Long Range Development Plan this calendar year. Together with the Physical Plan, the LRDP ensures that the campus will have the buildings and other facilities to support the goals of the Strategic Academic Plan—a vision for the future of UC Santa Barbara—which include enrollment growth, especially at the graduate level, and the concomitant increase in faculty and staff.

These developments will put the campus on course to eliminating its structural deficit, restoring departmental base budgets, and recovering some staff losses. They will also allow the UC Santa Barbara community—students, faculty, alumni, administrators, parents, and friends—to confidently reaffirm its commitment to creativity, analytical thinking, innovation, and efficacy in learning and teaching.

Note: Readers will find a detailed discussion of the budget and planning context in Appendix INT-1.

Report Organization
Six essays and several appendices make up the rest of this report. The three theme essays focus on the systematic assessment and improvement of student learning at UC Santa Barbara at three different stages of education, and the new and renewed institutional infrastructure and initiatives that promote it.

- The first essay describes the campus’s approach to analyzing the educational effectiveness of the General Education program, which represents the institution-level assessment for the campus.
- The second theme essay focuses on assessing and improving undergraduate learning in the 92 majors offered by UC Santa Barbara.
- The third theme essay examines assessment and enhancement of graduate education from five angles.
- The special topic student success essay begins by examining student success indicators and how they have changed over time at UC Santa Barbara, revealing encouraging trends for low-income,
first-generation college students. It then concentrates on a new study of the role the campus tutorial service plays in student success that, with other planned studies, will improve understanding of campus resources that have notable effects on student learning.

- The special topic program review essay discusses how the campus’s principal means of assuring quality and continual improvement in academic departments, Academic Program Review, has integrated learning outcomes assessment into its systematic, evidence-based analysis and reports. These reports can shape decisions and allocations of resources at all levels to improve departments and programs and ensure educational effectiveness.

- The final essay is the integrative essay, which describes the growing commitment across the campus community to applying the best critical and creative thinking to ensure that learning and teaching continue to thrive and improve, informed by forefront research and scholarship, and dedicated to preparing UC Santa Barbara students to flourish throughout their lives.

- Appendix I of this report sets forth each major recommendation from the WASC CPR team report and the WASC Commission action letter and briefly states how UC Santa Barbara has responded to each.
Analysis of Educational Effectiveness at the Institutional Level: Defining and Assessing General Education Learning Outcomes

This essay describes UC Santa Barbara’s approach to assessing educational effectiveness at the institutional level. The essay begins by discussing the General Education program, a comprehensive foundation for intellectual discovery and an indispensable part of undergraduate education at UC Santa Barbara. It then explains how a General Education Work Group engaged a broad range of faculty in defining formal student learning outcomes for every General Education subject area that College of Letters and Science students must study to satisfy the requirements for a bachelor’s degree. Next, the essay sets forth the rationale, process, and initial findings of the first assessment based on these newly articulated student learning outcomes. Finally, the conclusion describes how the initial findings might be used to improve student learning and encourage further assessment. The appendices of this chapter include the learning outcomes for each General Education area (A through G, plus five special subject areas), as well as the eight rubrics used to evaluate writing in the assessment project and the materials used to develop those rubrics in faculty workshops.

Introduction

The General Education (GE) requirement constitutes an essential part of the education of every UC Santa Barbara undergraduate. The GE program provides breadth of intellectual experience to undergraduates by exposing them to the fundamental ideas, methods, and perspectives of a broad range of disciplines. GE encourages intellectual curiosity: it asks students to step out of their comfort zones and explore unfamiliar areas where they may be uncertain of their own aptitude or where they will encounter ideas and content new to them. This exposure strengthens students’ understanding of what distinguishes different disciplinary approaches to the world and provides the breadth of cultural awareness and the intellectual capabilities vital to an effective and satisfying life as an individual, a professional, and a citizen. At the same time, the GE requirement provides students the opportunity to begin developing core competencies that are the hallmark of a UC Santa Barbara degree—to learn to write, think critically, perform quantitative analysis, and use foreign language at the level one expects of a university graduate. The GE program’s learning outcomes thus form a broad framework for learning that, when combined with learning in the major, constitute institution-wide learning outcomes for undergraduate students.

The GE program consists of seven general subject areas (Areas A through G) and up to five special subject areas. The objectives of the GE program for students in the College of Letters and Science¹ are to help students develop a facility in English composition (Area A); familiarity with a foreign language (Area B); an understanding of the methods, applications, and fundamental laws of science and mathematics (Area C); an understanding of what determines and influences the behavior and beliefs of individuals and groups (Area D); a perspective on world cultures through the study of human history and thought (Area E); and an appreciation of the arts through historical study, analysis of master works, and aesthetically creative activity (Areas F and G). The Academic Senate has approved a number of courses

¹ 93 percent of UC Santa Barbara undergraduates study in the College of Letters and Science and must therefore complete the L&S General Education program. The College of Engineering (1283 students) has separate GE requirements; however, these requirements overlap substantially with L&S’s. The College of Creative Studies (340 students) has a more flexible GE program, although CCS students also enroll in L&S GE courses.
as fulfilling each of these objectives. Within the additional “special subject areas,” students complete a writing requirement that is satisfied when a student in the college has taken a minimum of six courses in which a significant portion of the student’s assessment is based on original papers.

Articulating learning outcomes for such a broad array of classes, offered across disciplines and divisions, was a significant undertaking. To meet this challenge, a General Education Work Group, made up of faculty, administrators, and staff with expertise in undergraduate education, was appointed and subsequently endorsed by the Academic Senate. The GE Work group, in turn, enlisted the help of a remarkably large and diverse group of faculty in a multistage process to identify learning outcomes for all areas of GE (Appendix GEN-1).

Assessing learning outcomes in the broad scope of GE courses is a correspondingly complex task. The GE Work Group, motivated by both faculty interest in improving student writing and the national conversation about student achievement of this core competency, decided to conduct an initial assessment of student writing. To capture the diverse writing practices and values of different disciplines, similar disciplines were grouped together and eight different rubrics were developed. The writing assessment succeeded in creating a model for measuring student attainment of stated learning goals while defining those goals with a meaningful degree of precision. The findings have stimulated discussion of both the structure of assignments within writing-intensive classes as well as academic policy related to writing outcomes.

The General Education Work Group

The long history of faculty investment in the College of Letters and Science’s GE program reflects UC Santa Barbara’s commitment to the intellectual development of all students in the college. Over the last 30 years, the faculty has initiated several revisions to the program, and preparation for the current WASC review prompted a new initiative to examine and assess the GE program’s effectiveness. To this end, the Academic Senate endorsed a GE Work Group (GEN-2) and its two-part charge.

The first part of the charge, discussed in the following section, was to clearly articulate explicit student learning outcomes for the GE program. These outcomes align with the competencies set forth in WASC’s Criterion for Review (CFR) 2.2a. The second part of the charge, described in the fourth section of this essay, was to design a protocol to collect and analyze evidence of learning in the GE program and to reflect on ways these data suggest student learning could be improved. The Work Group decided that its initial assessment would focus on the writing requirement of the GE program. The Work Group carried out a study of the extent to which student papers exhibited mastery of the learning outcomes for the writing requirement. The first step in this evaluation was to work with faculty to develop rubrics appropriate to their disciplines to use in assessing papers from the courses in various disciplines that satisfy the writing requirement. These rubrics were then used to evaluate 340 papers written by students who had almost or fully satisfied the GE writing requirement in Spring 2012 or Fall 2012. (The results of the assessment are discussed later in this essay.)

Both parts of the charge to the GE Work Group had goals important to supporting the campus’s commitment to excellence in teaching and learning. In addition, the processes developed to achieve these goals offer a model for the assessment of student learning in GE that is faculty-led and firmly grounded in extensive consultation with and in review and approval by the Academic Senate.
Articulation of General Education Outcomes

With their emphasis on development of competencies and introduction to disciplinary concepts, the student learning outcomes for UC Santa Barbara’s GE program echo the commitment to cultivating knowledge and learning dispositions reflected in CFR 2.2 of the 2008 Handbook of Accreditation and the discussion of competencies in the 2013 Handbook of Accreditation. Additionally, because participation in the GE program enables students to build the foundation for more advanced, specialized study, the GE learning outcomes represent broad institutional outcomes for majors in any discipline or program. Both the learning outcomes themselves and the processes used to develop and assess them reflect UC Santa Barbara’s commitment to “analyze… how effectively courses… are structured, sequenced, and delivered so that students achieve learning outcomes at the expected level of performance in core competencies” (2013 Handbook 25).

In an introduction to the published GE Outcomes, the GE Work Group articulated the two broad purposes of the program: (1) “help[ing] students develop habits of mind and approaches to scholarly inquiry that are important within all disciplines in the academy,” and (2) “introduc[ing] epistemological practices—that is, ways of knowing and doing—that span broad disciplinary contexts.” The GE program’s statement of overall goals elaborates that students who successfully complete the GE requirement will be able to “participate in the protocols of scholarly inquiry within and across specific academic disciplines” and to “locate, interpret, and use sources from academic and vernacular sources (documents, artifacts, performances, etc.) in ways that are appropriate for specific contexts, audiences, and purposes.” These broad goals are achieved through the accomplishment of specific learning outcomes established for the seven general areas and five special subject areas of the GE requirement.

The process of articulating these goals and outcomes required a year-long collaboration among faculty and administrators. First, the GE Work Group was created and proceeded to identify the top 20 enrolling GE courses in each of the 12 areas from academic years 2009–2010 and 2010–2011. Faculty provided course syllabi and assignments, and this information was analyzed to broadly define course-level learning outcomes. Working with these broad outcomes, the Work Group drafted more focused learning outcomes for the 12 areas in the GE requirement. Faculty members were then invited to participate in focus group/feedback sessions on the draft area outcomes. Materials to guide those sessions included a memo outlining the overall process, a list of questions, and the draft versions of the GE introduction and learning outcomes for their area.

Beginning in April 2012, 94 faculty members teaching courses in 28 departments participated in 12 focus group/feedback sessions to review the draft outcomes for the GE requirements (Appendix GEN-3). The focus groups were facilitated by a member of the GE Work Group who has research expertise in assessment and a graduate researcher. Feedback from these sessions was then used to revise the outcomes, which were circulated back to the faculty for approval. By the end of Spring 2012, learning

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2 CFR 2.2a states that baccalaureate programs should “ensure the development of core competencies including … written and oral communication, quantitative reasoning, information literacy, and critical thinking.” The CFR further states that “undergraduate degrees include significant in-depth study in a given area of knowledge (typically described in terms of a program or a major).”

3 Syllabi from the top 10 courses over two years in each area were collected. There is overlap in the top 10 over these two consecutive academic years. These courses are listed in Appendix GEN-4.
outcomes had been established for each area, and the participating faculty had approved the Introduction to the GE program. In October 2012, the Undergraduate Council approved the Introduction and GE area learning outcomes. The newly articulated GE outcomes have already begun to serve as lenses through which UC Santa Barbara faculty members examine their courses. The outcomes are also at the core of a new document that is being used by the Academic Senate to approve new courses proposed for GE and by the College of Letters and Science and the Admissions Office to consider approval of transfer courses for GE.

The First Assessment of New General Education Student Learning Outcomes

Following the articulation of the outcomes for the GE program, the Undergraduate Council authorized the GE Work Group to undertake an assessment of the writing requirement courses included in the GE program. The assessment was designed to address one main question: To what extent do assigned papers demonstrate that students who have satisfied most or all of the writing requirement achieve the learning outcomes defined for the special subject area? In addition, to better understand the factors that contribute to achieving the learning outcomes, the Work Group compared the performance of students who had taken one of three possible pathways to satisfy the Area A GE requirement (which is presumed to serve as preparation for WR courses). To this end, they collected papers by students who met the requirement by (1) taking the required GE Area A writing course, Writing 2, within their first six quarters of enrollment (considered to be on schedule), or (2) taking Writing 2 after completing three or more writing-intensive (WR) courses, or (3) placing out of Writing 2 with scores of 4 or 5 on the AP Language and Literature or Language and Composition Exams. The Work Group then compared the extent to which each of these three groups of papers demonstrated the special subject area learning outcomes.

The GE Work Group developed an assessment based on extensive consultation with faculty members. This assessment was based on the principle that qualities of good writing are context-specific; that is, good writing in biology, for instance, differs from good writing in comparative literature. The Work Group began by convening a four-hour workshop for 22 faculty members from 18 disciplines in December 2012. During this session, faculty members worked in small groups to define and describe discipline-specific characteristics for the six writing-requirement learning outcomes. (Guides for each step

4 For example, History 17b is included in the area D requirement (Social Sciences). The professor of history who teaches the course has begun to carefully consider how course content can more explicitly enable students to achieve the outcomes, especially the following:

- applying discipline-specific theoretical perspectives and methods to questions about interactions between individuals, groups, and/or cultures;
- using a range of sources to inform inquiry into questions related to behaviors and beliefs of individuals and groups in specific disciplinary contexts; and
- critically evaluating the merit of claims on the basis of methods and empirical evidence from the discipline.

To facilitate students’ achievement of these outcomes, the professor has developed lectures on historical thinking that explicitly draw students’ attention to the metacognitive processes and practices that historians use as they develop and apply specific perspectives and methods to sources and the examination of evidence.

5 Since the outcomes were articulated based on an examination of course-level syllabi and assignments, the Undergraduate Council was confident that these outcomes were in place across a variety of courses.

6 The examination of performances by students in these groups was driven by questions raised by faculty, administrators, parents, and students.
of this process can be found in Appendix GEN-5.) Ideas generated during this process were then analyzed to distill a succinct discipline-specific definition of each outcome, to determine whether the discipline-specific outcomes overlapped enough to develop rubrics for more than one discipline, and to define four levels of achievement of these qualities in student writing. The results of these analyses were then circulated back to all faculty members who participated in the workshop with a request to evaluate the results and/or to provide additional information or opinions.

Eventually, eight rubrics were created to use in analyzing the student papers (Appendix GEN-6). Each rubric included discipline-specific (or multidiscipline-specific) characteristics associated with each of the six writing requirement outcomes. For example, outcome 1 states that students will “Use rhetorical conventions appropriate to the discipline or, if applicable, language.” In the rubric developed for History and Classics, these characteristics include “a thesis that describes an assertion about the past or a historical artifact that is designed to persuade a reader,” “an analytical question that is pursued throughout,” “analysis that acknowledges the contested nature of interpretation,” and “close analysis of primary sources or interpretations of other scholars.” In the rubric developed for Communication, Psychology, and Engineering (Ethics only), these characteristics include “clear organization around explicitly formulated conceptual or practical problems;” “clear use of existing theory to situate present work in a relevant, ongoing social issue;” “a theory- or data-driven argument;” and “use of a third-person voice that is objective, scholarly, and accessible to a college-educated audience.”

The rubrics used a four-point scale for each item: *consistently* executed (the characteristics associated with the outcome were always used in the paper), *generally* executed (the characteristics associated with the outcome were largely, but not always, used in the paper), *inconsistently* executed (the characteristics associated with the outcome were largely absent from the paper, but appeared occasionally), or *not executed* (the characteristics associated with the outcome were entirely absent from the paper).

To provide additional depth for the writing requirement assessment, characteristics associated with each outcome included in the rubric also were articulated with five metacharacteristics associated with writing within academic disciplines: analysis, use of evidence, structure, style, and writer’s presence. Manifestations of these metacharacteristics are specific to disciplines—in other words, different types of evidence are used in different disciplines, and the ways in which those disciplines characterize appropriate use are different, but all academic disciplines place value on evidence and its use. All of the rubrics used for the study were also coded based on these metacharacteristics; however, these characteristics were not visible to those doing the rating of student writing.

Concurrent with the development of the writing requirement rubrics, 400 student papers were collected from writing requirement courses to be included in the sample (for further details about the study, please see Appendix GEN-7; 60 of these papers were excluded from this study for a variety of different reasons). 21 raters (faculty members in the Writing Program, graduate TAs from humanities and fine arts departments teaching in the Writing Program, graduate students in the Education PhD specialization in Language, Literacy and Composition, and the Dean of Undergraduate Education) used the rubrics, developed through extensive consultation with faculty, to assign ratings to papers from 26 disciplines. Because of the broad range of disciplines from which papers were collected, the favorable ratio of papers to raters, and raters’ expertise, this assessment represented an important first step in the systematic examination of writing completed by students in Writing Requirement courses.
Writing Requirement Assessment Findings

Overall, the assessment indicates that these student papers demonstrate writing qualities described in the writing requirement learning outcomes and delineated within the discipline-specific rubrics. A significant majority of papers demonstrated the criteria associated with the learning outcomes consistently (meaning invariably throughout the paper) or generally (meaning more often than not). The proportion of papers demonstrating the criteria at this level ranged between 71–80% for outcomes 1 through 5. Criteria for outcome 6 (“use citational style and form appropriate to specific disciplines”) were demonstrated consistently or generally in 57% of papers; however, it is not known to what extent appropriate citational style and form were required or taught in the courses from which the sample essays were derived.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>(3) Consistently Met</th>
<th>(2) Generally Met</th>
<th>(1) Inconsistently Met</th>
<th>(0) Not Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1: Use rhetorical conventions appropriate to the discipline or language. (n=340)</td>
<td>47%</td>
<td>33%</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>Outcome 2: Identify the roles that types of writing play in the production and circulation of knowledge within specific disciplines. (n=340)</td>
<td>41%</td>
<td>30%</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td>Outcome 3: Locate, interpret, and use discipline-specific evidence appropriately. (n=339)</td>
<td>38%</td>
<td>36%</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>Outcome 4: Identify the role of evidence in writing within specific disciplines. (n=340)</td>
<td>38%</td>
<td>36%</td>
<td>18%</td>
<td>7%</td>
</tr>
<tr>
<td>Outcome 5: Use conventions of organization, style, coherence, structure, syntax, and mechanics appropriate to specific disciplines. (n=339)</td>
<td>46%</td>
<td>34%</td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>Outcome 6: Use citational style and form appropriate to specific disciplines. (n=317)</td>
<td>29%</td>
<td>28%</td>
<td>41%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Figure GEN-1. Aggregate outcome ratings for all papers in the sample showing that a significant majority of papers meet (demonstrate consistently or generally) the writing requirement outcomes.

The majority of papers also executed the five metacharacteristics identified for the assessment at a consistent or general level. Analysis and evidence are the two most heavily weighted metacharacteristics in the study, meaning they incorporate the largest number of criteria. Of the sample, 77% executed metacharacteristics associated with analysis at a consistent or general level, and 70% consistently or generally demonstrated the characteristics associated with evidence.  

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7 The sample size for individual disciplines varied widely (5 papers from science disciplines on the low end, 131 papers from all Studies disciplines on the high). Thus, the findings within specific disciplines provide only a small look at the work of individual writers within courses. Some differences in the extent to which the writing reflects these qualities appear between disciplines; for example, papers collected from communication, psychology, and engineering (n=16) were most often rated as consistently or generally reflecting valued qualities, while papers from English, comparative literature, and languages (n=51) were slightly less likely to do so.
The Work Group then extended the analysis to investigate whether student authors with different kinds of preparation were distinguishable in their achievement of the six outcomes. Specifically, the Work Group wanted to explore whether students who were exempted from the required GE Area A writing course, Writing 2, based on their AP exam scores performed as well as students who had completed Writing 2. They also wanted to compare the performance of students who took Writing 2 within their first six quarters of enrollment (considered to be on schedule) with students who took Writing 2 after completing three or more writing-intensive courses.

**Students Who Had Taken Writing 2**

Few statistically significant differences can be seen between the papers submitted by students who completed Writing 2 on time, within the first six quarters of enrollment (Writing 2 Pre), and by students who took Writing 2 after taking three or more other required writing courses (Writing 2 Post). The criteria associated with outcomes 1 through 5 were demonstrated consistently or generally in 70–80% of the papers from all students who took Writing 2 at any time. Criteria for outcome 6 were met consistently or generally in 56% of papers by students who took Writing 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing 2 Pre</td>
<td>124</td>
<td>77%</td>
<td>72%</td>
<td>72%</td>
<td>73%</td>
<td>81%</td>
<td>59%</td>
</tr>
<tr>
<td>Writing 2 Post</td>
<td>98</td>
<td>79%</td>
<td>67%</td>
<td>73%</td>
<td>70%</td>
<td>79%</td>
<td>53%</td>
</tr>
<tr>
<td>AP 4</td>
<td>77</td>
<td>80%</td>
<td>68%</td>
<td>74%</td>
<td>77%</td>
<td>79%</td>
<td>51%</td>
</tr>
<tr>
<td>AP 5</td>
<td>41</td>
<td>88%</td>
<td>83%</td>
<td>82%</td>
<td>84%</td>
<td>88%</td>
<td>70%</td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
<td>80%</td>
<td>71%</td>
<td>74%</td>
<td>75%</td>
<td>81%</td>
<td>57%</td>
</tr>
</tbody>
</table>

**Figure GEN-2.** Percent of study participants in each sample group achieving the GE WR student learning outcomes at a consistent or general level. Note: Bold denotes results that are statistically significant at the 95% confidence level when comparing across groups.

**Students Who Received a Score of 5 on the AP Exam**

Current UC Santa Barbara policy exempts students who receive a 5 on the AP Language and Literature or Language and Composition Exams from the lower- and upper-division writing requirement, including Writing 2. These students were the most likely of the three groups to be rated as consistently demonstrating all of the writing requirement outcomes and all but one of the meta-characteristics in the study (p<.05). This result extends across discipline- or multidiscipline-specific rubrics for a number of the criteria.

**Students Who Received a Score of 4 on the AP Exam**

Students who received a 4 on the AP Language and Literature or Language and Composition exams are also exempt from Writing 2 (but not upper-division writing) at UC Santa Barbara. As indicated in the table below, the percentage of papers from this group rated as consistently or generally meeting the outcomes largely paralleled the ratings of papers from students who had completed Writing 2. However, the AP4 papers were slightly more likely than other groups to be rated as not meeting characteristics associated with four of the six outcomes assessed (p<.05). For outcome 1, 10% of papers from the AP4 group did not execute the criteria associated with the outcome. Papers by AP4 students were also slightly more likely than those of AP5 and Writing 2 Pre groups to be rated as not meeting the metacharacteristics...
associated with analysis, one of the most heavily weighted metacharacteristics associated with academic writing.

While this analysis indicates that, overall, writing by students who are at or near the completion of their general education Writing Requirement demonstrates the characteristics associated with the general education Writing Requirement outcomes at a consistent or general level, it also provides some evidence for further investigation of whether AP4 students would benefit from additional support.

Next Steps
The results of this assessment suggest several next steps. First, to make optimal use of the study and the tools designed to carry it out:

- Campus writing assessment experts will reach out to the departments offering writing intensive (WR) courses to discuss the WR assessment findings and to assist them in adapting the assessment rubric for use in the departments/disciplines.

- Departments seeking to develop discipline-specific assessments of writing within their own departments/related to WR courses will receive support from faculty assessment leaders and staff for developing assessments related to discipline-specific aspects of writing work (i.e., appropriate interpretation of disciplinary content or appropriate application of discipline-specific theory).

Second, to extend this study to assess learning outcomes for General Education Area A and to further examine the performance of AP4 students:

- The UC Santa Barbara Writing Program and English Departments, the two units offering courses fulfilling GE Area A (English Reading and Composition), will undertake an assessment to study the extent to which writing by different student populations (AP3, AP4, and transfer students) achieve the outcomes of the courses. The methodology for that study will map onto this one, thus providing a more thorough examination of writing performance within GE. Similar findings for AP4 students would provide further evidence for considering targeted support for AP4 students.

- The campus Writing Program will explore the possibility of a follow-up study focusing on the work of AP4 students enrolling in Writing Requirement courses and, if warranted by the results, determine what pedagogical changes or revisions to academic policy or requirements might address their needs.

Finally:

- This study has highlighted the need for UC Santa Barbara to have a systematic process for evaluating General Education. The administration and the Academic Senate are working on developing such a process to ensure ongoing review and assessment of all areas of the General Education program.
Assessing Student Learning in the Major

This essay describes UC Santa Barbara’s faculty-driven process to articulate learning outcomes for each of the campus’s 92 undergraduate majors and to provide additional impetus to evidence-based assessment and improvement of student learning by departments. It then discusses the permanent organizational structures and policies put in place since the CPR to support sustainable assessment, including the faculty-led Council on Assessment and the new Assessment Research Group within the Office of Budget and Planning. Next, the essay explores what the four departments that first established PLOs learned when they gathered and reviewed data on their educational effectiveness. Finally, it previews campus plans to build expertise and broaden the dialogue around assessment, both across campus and among our sister campuses within the UC system.

Introduction

The report prepared for UC Santa Barbara’s 2011 Capacity and Preparatory Review (CPR) described the campus’s strategy to incorporate the formal assessment of student learning outcomes into existing practices for evaluating and improving undergraduate programs. Four pilot departments had completed program learning outcomes (PLOs) and assessment plans at the time of the CPR. Since then, the campus has extended the pilot program and has met all the goals established for undergraduate programs by the WASC Commission:

- UC Santa Barbara now has program learning outcomes approved by the Academic Senate in place for every major on campus. Any new academic program that is established will also have approved program learning outcomes.
- Every department has approved an assessment plan and has identified a new assessment question to explore.
- The new Council on Assessment ensures support for faculty-driven assessment of all degree programs and of General Education.
- The new Assessment Research Group works with the Council on Assessment to ensure that expertise in assessment is available to faculty across the campus.
- Academic Program Review procedures now integrate consideration of student learning assessment into regular reviews of departments.
- The four pilot departments have completed multiple assessment projects and are using the results to guide further program improvement.

Defining PLOs for Every Undergraduate Degree Program

At the conclusion of the CPR, the campus adopted a strategy to guide all undergraduate programs through the process of articulating program learning outcomes and creating assessment plans. The process included (1) an introductory informational meeting, (2) facilitated discussion of challenges and assessment ideas among faculty from similar disciplines, and (3) one-on-one feedback and support as department representatives drafted PLOs in consultation with their department colleagues and incorporated suggestions from the Academic Senate. The process is explained in greater detail in the Appendix (UND-1).
Once departments had drafted, revised and approved PLOs for each major, they were submitted to a committee of the Academic Senate, which frequently suggested revisions prior to approving them. This cross-disciplinary peer-review process clarified discipline-specific language to make the outcomes more easily understood by non-specialists, including students.

Initially, the Committee on Learning Outcomes and Assessment (CLOA), an ad hoc committee of the Undergraduate Council of the Academic Senate, evaluated and approved both PLOs and assessment plans. By Spring Quarter 2012, it was clear that this strategy was flawed. Within UC Santa Barbara’s institutional structure, the Academic Senate has overarching responsibility for the curriculum; it is therefore the appropriate body to approve program learning outcomes, a one-time process that would only be revisited if a department requested changes to an existing degree program or submitted a proposal to establish a new degree program. Assessment plans, however, are dynamic, and it was agreed that the Academic Senate was not the appropriate body to review them. In fall 2012, the review and support of department assessment plans was moved to two newly formed groups: the Assessment Research Group and the Council on Assessment, which are described in the next section. CLOA was then reconstituted as the Committee on Learning Outcomes (CLO), with responsibility only for PLOs.

The level of faculty participation in the development of learning outcomes and assessment measures has been remarkable. Representatives from every department offering undergraduate degrees in the College of Letters and Science and the College of Creative Studies drafted outcomes for their own programs and engaged their department’s curriculum committees to discuss and refine the PLOs and propose assessment questions. PLOs and assessment plans were voted on by the entire faculty of each department. Such an inclusive process required substantial effort, coordination, and time; it has led to a strong set of PLOs and a faculty who are firmly invested in this approach to learning assessment.

Organizational Structures and Policies to Sustain Assessment

One outcome of the pilot assessment projects was the realization by the Steering Committee for UC Santa Barbara Reaffirmation of Accreditation (SCURA) that the campus needed to build expertise in, and increase its capacity for, supporting departments in student learning assessment. To do so ensures that assessment of PLOs becomes a primary means for programs to evaluate their success and identify effective improvements in the education they provide. In Winter Quarter 2012, the Executive Vice Chancellor appointed an Assessment Task Force (ATF), a subcommittee of SCURA, to explore the best way to provide a permanent support and review infrastructure for learning outcomes assessment. The institutional structures described in this section are intended to make certain that assessment is firmly embedded in campus culture and practice. These changes are based on recommendations the ATF made to the Executive Vice Chancellor following extensive deliberation and discussion. (The recommendations may be found in Appendix UND-2.)

Key developments in instituting a strong and sustainable PLO assessment infrastructure at UC Santa Barbara include (1) establishment of the Council on Assessment and the Assessment Grant Program,

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8 CLO took the task of review extremely seriously. They requested revisions for more than half the original proposals prior to approval, as well as a significant number of second revisions.

9 The five undergraduate degree programs in the College of Engineering had already developed learning outcomes to satisfy the criteria of their accrediting organization, ABET.
(2) creation of the Assessment Research Group within the Office of Budget and Planning, and (3) revisions to Academic Program Review procedures. These steps are explained in detail below.

Establishment of the Council on Assessment and the Assessment Grant Program

In Fall Quarter 2012, the Executive Vice Chancellor established the Council on Assessment with faculty drawn from a wide range of disciplines (members are listed in Appendix UND-3). This faculty committee’s primary role is to facilitate program-level assessment at UC Santa Barbara at both the undergraduate and graduate levels. The Council’s focus is twofold: to provide support to departments as they further develop an assessment-oriented environment and to build faculty expertise in assessment. Two Council members are faculty liaisons charged with consulting directly with departments to help identify assessment questions, develop appropriate assessment methods, and analyze results. The Associate Dean of Undergraduate Education for the College of Engineering participates in the Council on Assessment to ensure that the Council’s efforts are informed by the College of Engineering’s long-standing experience with ABET–required assessment of learning outcomes.

In Winter Quarter 2013, an Assessment Grant Program was announced to fund assessment projects undertaken during academic year 2013–14 (the first call for proposals is in Appendix UND-4). Ten proposals were received in the first round and reviewed by the Council on Assessment. The Council recommended to the Executive Vice Chancellor that five projects be funded in the current year, and several other proponents were encouraged to revise their proposals and submit them in a future round. The funded proposals (identified in Appendix UND-5), which cover a broad range of disciplines and assessment methods, have the potential to be useful to additional departments and programs.

The Council on Assessment has also established an assessment speaker series, starting with a visit in Winter Quarter 2013 from Jennifer Lindholm (special assistant to the dean and vice provost for undergraduate education at UCLA, and that campus’s accreditation coordinator). The Council has also invited assessment expert Professor Randall Bass, executive director of the Center for New Designs in Learning and Scholarship at Georgetown University, to give a presentation and workshop in Winter Quarter 2014.

UC Santa Barbara has been instrumental in establishing a group of assessment personnel from all UC campuses to share information and best practices. The group met first at WASC’s Academic Resource Conference in April 2013, and participants are holding monthly teleconferences to share information about how assessment is being integrated into their campuses. The group plans to meet in Santa Barbara and attend the workshop by Professor Bass in Winter Quarter 2014.

Creation of the Assessment Research Group

To further support effective, efficient assessment, the campus has established the Assessment Research Group within the Office of Budget and Planning. This resource, which comprises two new full-time professional positions and one new half-time staff support position, was created to provide academic departments and programs, as well as the Council on Assessment, with technical expertise in areas such as quantitative data analysis. (The Integrative essay provides more information on this group.)
Revisions to Academic Program Review Procedures

To make certain that assessment of student learning is a central consideration in the evaluation of academic departments, Academic Program Review procedures have been modified to ensure that departments report and reflect on assessment of student learning. External review committees will also be asked to analyze and comment on these aspects of the program. (Details of these changes, including new assessment expectations for programs under review, are provided in the Academic Program Review essay.)

Pilot Assessment Projects and Resulting Improvements

The basic premise driving PLO assessment efforts at UC Santa Barbara is that assessment must originate with departmental faculty if it is to be effective and valued. Professors Kelly Bedard and Linda Adler-Kassner, both faculty liaisons on the Council on Assessment, helped other faculty members develop and implement the pilot assessment projects. Faculty study of the assessment questions in these pilot departments (identified below and in the CPR Report) has led to more refined questions and a more nuanced understanding of issues that contribute to student learning. The pilot departments have all completed several assessments over the past 18 months, building on the projects described in the CPR Report. These assessments are discussed below, and more detailed research reports are provided in the appendices (UND-6, 7, and 8).

Economics and Economics and Accounting

Two majors offered by the Department of Economics—Economics and Economics and Accounting—are the most popular for transfer students. Transfer students make up almost 50% of the department’s student population, so the success of this group is an important reflection of the department’s educational effectiveness. Historically, significant numbers of transfer students have not completed their chosen economics major at UC Santa Barbara. Therefore, for the department to achieve its program learning goals, its program structure and curriculum must address the needs of transfer students.

In response to feedback from both students and an Academic Program Review, the Department of Economics fundamentally restructured its undergraduate curriculum. As a part of that restructuring, the faculty decided to move intermediate microeconomic theory from the upper division to the lower division: Economics 100A became Economics 10A. This change was made largely to inform students of any skill deficiencies as early as possible. Economics 10A was offered for the first time in Winter Quarter 2011.

The faculty decided to use data from this course to identify specific skill deficiencies and to inform future decisions about the microeconomics curriculum. The initial assessment included

- results of pre-testing for basic math skills and knowledge of microeconomics,
- individual scores for each test question on midterms and final exams in the course, and
- students’ transfer status and basic demographic characteristics.

The faculty used these data to assess how well they are accomplishing the components of the program learning outcomes covered in or before Economics 10A.
The data have also given faculty greater insight into the extent to which transfer students enter with deficits and the extent to which they are able to overcome these deficits. For example, pre-testing revealed that transfer students tend to enter with weaker math backgrounds than students who entered as freshmen. As a result, Economics 10A now includes a more rigorous math review at the beginning of the course. This change has substantially reduced the incidence of mathematics errors observed in Economics 10A student work, improving every student’s chances of success.

Analyzing entering grades and Economics 10A grades further led the faculty to realize that less than 35% of transfer students entering with introductory economics grades lower than a B managed to earn entry into one of their majors. As a result, the Department of Economics has submitted a formal request to the Academic Senate, urging a reconsideration of the rules for transfer eligibility, because the current system sets up a large minority of transfer students for failure.

Finally, these first rounds of assessment encouraged the faculty to submit a proposal to the Council on Assessment to support a new effort to use the TUCE, a nationally normed economics exam, to pre-test freshman and post-test seniors to gather more evidence about the extent to which they are achieving their stated microeconomics and macroeconomics program learning goals. The Council on Assessment supported the grant application, and this assessment is now taking place.

**Biological Sciences**

Biological Sciences is one of the largest majors on campus and attracts many students interested in a broad range of health care professions. The degree is jointly offered by the two biology departments on campus: the Department of Ecology, Evolution and Marine Biology and the Department of Molecular, Cellular and Developmental Biology. A common set of prerequisite courses is shared with the nine majors offered by the two departments. The prerequisites include chemistry and mathematics courses that must be completed before students take a year-long introductory biology sequence, typically in their second year.

The biology faculty identified the issue of students repeating introductory biology courses for their initial assessment study since it touches on a broad range of program learning outcomes and program structure questions. To gain entry into medical school or one of the biology majors, students must maintain a competitive GPA. According to Academic Senate regulation, students may replace a grade in their overall grade point average by repeating a class, thereby improving their GPA if their performance in the class improves. Biology faculty were concerned that when students who repeat an introductory biology class remain in the major, they very frequently struggle in upper-division biology courses. Alternatively, if these students fail to gain entry into the major, their time to degree is often substantially increased. The biology faculty identified several potential contributing factors to explore, asking whether students who repeat introductory biology courses

- have inadequate background in prerequisite areas, such as chemistry and math;
- have an interest in access to healthcare professions, but lack interest in biological sciences;
- have identifiable characteristics that could predict poor performance; or/and
- don’t use resources (such as advising and tutoring) that could help them learn.
To investigate, three sets of data were collected and analyzed. First, beginning in Summer Quarter 2011, individuals in one cohort of students entering introductory biology for the first time were tracked through their academic career at UC Santa Barbara to observe how many repeated introductory courses, what major they entered, and their time to graduation. It was found that a sizable minority of students repeat introductory biology courses, and that many of these students do not gain entry into the biology majors. The study also revealed that students who repeat introductory biology courses take substantially longer to graduate, and that there was a higher than average rate of repeating among underrepresented minorities.

After identifying these issues, faculty wanted to understand the contributory factors. Data from more cohorts and information on how repeating students had performed in prerequisite chemistry and math classes were examined. This second study showed that repeaters were somewhat more likely to perform poorly in prerequisite classes. It also suggested that the higher-than-average rate of repeating among underrepresented minorities may partly be tied to lower performance in prerequisite classes.

The faculty conjectured that two contributory factors led underrepresented minorities to repeat courses at a higher rate than average: making less use of formal advising and tutoring, and having less-well-developed informal (friendship) networks within science, technology, engineering, and mathematics (STEM) disciplines. Faculty surveyed introductory biology students to learn about their use of educational resources (tutors, advisors, etc.) as well as their access to informal support systems (friends in biology, etc.). The survey evidence (from Winter Quarter 2013) did not support the conjectures. Rather, the data suggest that other factors, including inadequate prior preparation and lack of motivation to study biology while targeting one of the health professions, may be productive areas for inquiry.

The biology departments are using findings from these studies in several ways. Faculty in Molecular, Cellular and Developmental Biology are pursuing grant funding to provide early intervention for students in the Educational Opportunities Program (low-income and first-generation students). The intervention will consist of a year-long educational program, starting the summer before the students come to UC Santa Barbara and continuing throughout their first academic year. The program is still being developed, but the concept is to combine formal teaching in foundational science and math with mentorship by graduate students, including freshman participation in research labs. In addition, the departments have increased their outreach to at-risk students as early as possible in their academic careers, both to direct students towards available resources and to counsel students about major options and paths to success. The biology faculty is also integrating the results of these studies in their ongoing consideration of the introductory biology curriculum.

History

Although history majors at UC Santa Barbara may choose from a wide range of upper-division courses, at least one must be a proseminar course. At UC Santa Barbara, a proseminar is designed to cultivate the research skills of a professional in the field: the ability to define issues, gather pertinent information, and digest and report that information in a clear, well-conceived argument. History faculty chose to begin their assessment process by asking a few simple questions about achievement in proseminars. They wanted to explore the extent to which proseminar performance is related to

- choice of lower division sequence,
- whether the proseminar has a prerequisite,
• grading standards in proseminars,
• timing of a proseminar (do students who take their proseminar in the Spring of their senior year perform more poorly?), and
• the number of students in the proseminar.

The first round of data collection and analysis, begun in Spring Quarter 2011, gathered the complete academic records for a single graduating cohort, to track the course sequences and the individual paths students took to their proseminar. The two findings of note from this round were that transfer students perform less well in proseminar courses, and that there is substantial grade compression in proseminar courses.

These conclusions led to a second round of data collection, in which the sample size was increased to include several cohorts, to better compare grade distributions in proseminars with those of other upper-division courses and to examine whether either the timing of the proseminar or the size of the class had an impact on grades. However, this study yielded very few usable findings, leading the participating faculty members to reassess their methods.

The faculty decided that a more productive approach would be to map out all the opportunities that students have to accumulate the knowledge and skills included in their program learning outcomes by reviewing syllabi and course assignments and surveying instructors. In April 2013, the Department of History submitted a grant proposal to the Council on Assessment. The Council awarded the grant to support this effort in May 2013, and the investigation is underway.

The process of starting with a simple project and iterating towards progressively more insightful methods and questions is a strong path to sustainable assessment. In the course of these assessment studies, history faculty learned that grades in the proseminar did not necessarily reflect student learning, leading the faculty to a more sophisticated understanding of assessment.

The Future of Assessment at UC Santa Barbara

As UC Santa Barbara looks forward to continuing and expanding its ongoing assessment of student learning, it will rely on the key structures it has established to ensure faculty-led educational effectiveness. The University continues to build on its record of success in the following ways:

• PLOs will be disseminated on a new assessment website, in the General Catalog, on major sheets, and on department web pages.
• The Assessment Council will continue to act as a catalyst for assessment activities on campus by inter alia building faculty interest and knowledge in assessment through the Speaker Series and the Assessment Grant Program.
• Several new assessment proposals will be implemented in academic year 2013–14. The projects (described in Appendix UND-5) cover a broad range of disciplines and assessment methods. Some of these projects are scalable and relevant for other similar departments.
• Under the new Academic Program Review procedures, departments will be required to formally report on and receive feedback on how assessment has been used to improve educational effectiveness.
The Assessment Research Group will continue to build expertise to be shared with the campus by participating in assessment activities including WASC workshops, conferences, and WASC’s Assessment Leadership Academy.

The campus will play an active role in the UC-wide Assessment Group, sharing best practices and other resources with sister campuses in the UC system.
Excellence in Graduate Education

This essay examines educational effectiveness in graduate education at UC Santa Barbara through multiple lenses. The first section describes the campus’s successful work to articulate program learning outcomes and assessment plans for every graduate degree program on campus. The second addresses the ways in which UC Santa Barbara has examined and enriched the interdisciplinary environment for graduate students. Both initiatives were inspired by the campus’s work toward reaccreditation, although they were not explicitly among the goals for graduate education set forth in the campus’s 2011 Capacity and Preparatory Review (CPR) Report. The remaining three sections describe how the campus is achieving the goals identified in the CPR Report for career outcomes, metaprofessional skill development, and the engagement of campus constituencies in data-driven analyses of graduate programs.

Introduction

Graduate education is central to UC Santa Barbara’s mission as a leading research university. The campus takes seriously its role in training the next generation of leaders in academia, industry, government, and nonprofit organizations who will contribute to the nation’s intellectual, cultural, and economic success. With their faculty mentors, graduate students form a community of scholars whose creativity, collaboration, and innovation spark the campus’s remarkable research productivity. Superb graduate training is foundational to the success of the faculty, their departments, and the campus as a whole. It both reflects and instantiates scholarship at UC Santa Barbara.

UC Santa Barbara’s CPR Report presented preliminary results of an in-depth exploration of the theme “Excellence in Graduate Education.” This essay summarizes the campus’s significant progress in five focus areas: three that were identified in the CPR, and two that were prioritized based on direct feedback from the CPR visiting team and the WASC Commission. The ultimate goal of all five is to ensure that UC Santa Barbara graduate students continue to succeed across a wide range of careers.

First, all PhD programs and terminal master’s degrees now have stated program learning outcomes and are creating assessment plans. Second, recent innovations have further strengthened the interdisciplinary environment for graduate students. Third, to help the campus better understand and further improve the effectiveness of the graduate education it provides, placement information on doctoral graduates is being consolidated and plans are being developed to institute best practices for alumni tracking. Fourth, the Graduate Division has improved and expanded career and professional development opportunities for graduate students to help them prepare for a broad range of careers across multiple employment sectors. Fifth, the campus has extended its use of evidence-based assessments to ensure that graduate programs maintain excellence in a rapidly evolving academic and professional environment.

Program Learning Outcomes and Assessment

In preparing for the 2011 Capacity and Preparatory Review, UC Santa Barbara’s Excellence in Graduate Education Committee reflected on assessment in graduate education and noted that, as in all successful research universities, the campus’s graduate programs are structured around assessment milestones—such as papers, presentations, oral and written exams, dissertation proposals, and the dissertation—at which student work is scrutinized closely by faculty mentors. The primary purpose of each milestone is careful
assessment of each graduate student’s mastery of the essential knowledge and skills required in the discipline. This understanding of assessment in graduate education has been recently supplemented by the campus’s work at the undergraduate level to systematically assess student learning in the major. Encouraged by the progress of this initiative, and prompted by WASC’s March 2012 Action Letter, the campus has extended this approach to graduate education.

The campus originally planned a pilot project that would assist a few departments in articulating formal learning outcomes and assessment plans. By late fall 2012, however, it was clear that department faculties were receptive to the idea of identifying and assessing program learning outcomes (PLOs). In winter 2013, the campus decided to accelerate the process and establish PLOs for all graduate programs by the end of the academic year. This goal has been achieved.

The new graduate PLOs provide an additional tool to evaluate whether graduate students have learned and can effectively apply core knowledge in their disciplines and whether they are able to conduct research and/or engage in appropriate professional practices. Many faculty report that the process of developing PLOs and planning for assessment has led them to reflect in new ways on their curricula and on their role in educating and preparing graduate students for postgraduate careers. (The campus’s progress and preliminary results are elaborated on in Appendix GRA-1.)

Steps Taken To Develop Graduate Program Learning Outcomes and Assessment

UC Santa Barbara’s initiative to identify program learning outcomes and establish assessment plans in all master’s and doctoral degree programs began in 2012. Because all departments with undergraduate degrees had already developed undergraduate PLOs, the process was more efficient this time. To oversee this work, the graduate dean appointed a faculty assessment coordinator for graduate education (known as the graduate assessment coordinator), Karen Myers, an associate professor from the Department of Communication. She worked with faculty and administrative staff to develop a guiding framework that would involve faculty and bolster an already strong culture of assessing and improving graduate learning.

To lay the groundwork for the project, the graduate assessment coordinator met with graduate advisors and department chairs to reflect on how they currently assess learning in their graduate programs. The groups discussed how the articulation of program learning outcomes and their assessment could provide another lens for evaluating the effectiveness of graduate degree programs. In these discussions, faculty affirmed that learning outcomes and assessment methods must be developed in ways that preserve the disciplinary commitments of each graduate program.

To begin a pilot project, the graduate dean and the graduate assessment coordinator met at the beginning of the academic year with graduate advisors from two academic departments. The advisors were introduced to the concept of PLOs and their assessment. The graduate assessment coordinator met with 15...
additional graduate advisors later in Fall Quarter 2012 and with graduate advisors from the remaining programs during Winter Quarter 2013.

Although the initial plan had been to hold a workshop to assist the departments in articulating outcomes and identifying appropriate assessment activities, departmental representatives preferred to undertake this work with their department colleagues.

To document the process, the graduate advisors prepare a report designed to encourage departments to think carefully about learning outcomes, how the curriculum maps to them, and how to use them as part of assessment (Appendix GRA-2). In Part 1 of the report, departments define the PLOs, which are designed to reflect desired knowledge and skills for students completing their programs. After the PLOs are completed, they are evaluated by the graduate assessment coordinator, revised, and eventually voted on by the department faculty. Other portions of the report discuss how PLOs could be assessed (Part 2), how students attain knowledge and skills discussed in the PLOs (Part 3), and how the program intends to implement assessment (Part 4). (The first graduate advisors to finish the report found that once the PLOs were developed and approved, the remaining parts of the report were easily completed.)

All department-approved PLOs are reviewed by a subcommittee of the Graduate Council of the Academic Senate to ensure that they are clearly defined and include the broad goals for graduate education expected of every program. Elements of the reports will be integrated into each department’s academic program review.

To date, 100% of the campus’s graduate programs have articulated PLOs for their master’s and doctoral degrees, and their faculties have voted to approve them. As of this writing, the Graduate Council has reviewed and approved, sometimes after requesting modifications, the PLOs of 42 academic units, representing 68 different degree programs. Each program’s PLOs will eventually be available to current and prospective students in UC Santa Barbara’s online general catalog. In addition, 12 programs have developed full reports (Parts 1–4) (Appendix GRA-3).

**The Interdisciplinary Environment in Graduate Education**

As noted in the campus’s Strategic Academic Plan, UC Santa Barbara is renowned for its culture of collaboration across disciplinary boundaries and its pioneering work in new interdisciplinary fields. Graduate students are central to these pursuits and have a wide range of options for interdisciplinary study and training on campus.

Sixteen of UC Santa Barbara’s graduate programs are thematically defined and inherently interdisciplinary: they are led by faculty from multiple disciplines and based on cross-disciplinary curricula (Appendix GRA-4). In addition to these fully interdisciplinary programs, almost all graduate students completing doctorates may pursue one or more interdisciplinary doctoral emphases (Appendix GRA-5). Emphasis participants take required seminars, which enable them to build an interdisciplinary cohort; they also complete an elective requirement and a dissertation topic in the emphasis area. These emphases institutionalize research and education collaborations on campus. For example, the economics and environmental science emphasis was created in order to continue educational activities originally created with an award from the National Science Foundation’s Integrative Graduate Education and Research Traineeship (IGERT) program in 2001. The emphasis offers doctoral students in either the
Department of Economics or the Bren School of Environmental Science and Management the opportunity to pursue a multidisciplinary program in environmental economics as a supplement to their major degree.

UC Santa Barbara graduate students also have many opportunities to take part in interdisciplinary research without adding a formal degree objective. To highlight three examples: First, many Organized Research Units and Centers offer graduate students opportunities to be involved in interdisciplinary research; for example, the Interdisciplinary Humanities Center hosts 13 research focus groups that incorporate graduate students (Appendix GRA-6). One of these is the Identity Studies Research Focus Group, which holds an annual graduate student panel in which doctoral students from multiple departments present their current research. Second, many UC Santa Barbara faculty collaborate across departmental boundaries on extramurally funded research (with administrative support from several organized research units); in Fall Quarter 2012, these interdepartmental grants supported 234 graduate student researchers (Appendix GRA-7). Third, the Critical Issues in America program, sponsored by the College of Letters and Science, supports innovative educational programming in an interdisciplinary topic selected each year. The 2012–13 topic is *Figuring Sea-Level Rise*; graduate students participate in workshops and symposia addressing the natural and social aspects of rising sea levels from a wide range of disciplinary perspectives (Appendix GRA-8). Finally, many programs on campus either require or encourage students to enroll in courses from outside their discipline, an effort which further increases interdisciplinary dialogue.

**Assessing Interdisciplinary Graduate Education**

In 2011–12, the Graduate Division assessed the effectiveness of interdisciplinary graduate education at UC Santa Barbara by asking students about their experiences (Appendix GRA-9). The majority of graduate students surveyed (74%) considered their work to be interdisciplinary. Of those, 76% stated that courses outside their academic departments assisted them in their interdisciplinary research; 31% cited participation in an emphasis and 47% cited involvement in research in a department or center outside of their home department.

These students valued the stimulating collaborative environment and the breadth in training and networking opportunities that interdisciplinary work offers—advantages in either the academic or the nonacademic job market. When asked about the challenges of interdisciplinary work, 58% of students reported no barriers. Those who did emphasized difficulties communicating with scholars from other disciplines; lack of confidence in the content, approach, or methodology of the new field and in knowing where to find advice; uncertainties about how to forge bonds with people in new fields, especially potential faculty advisors; and questions about how to situate themselves for the academic job market. The most common suggestions for improving the climate for interdisciplinary study included providing more funding for collaborative and interdisciplinary research, offering more interdisciplinary courses and seminars, and facilitating interdisciplinary gatherings and communication.

In response to these comments, in 2012–13 the Graduate Division developed a range of programs designed to promote formal and informal cross-departmental graduate student interaction:

- The annual reception for students holding fellowships, previously campus-wide, has been broken into smaller divisional receptions to provide a more intimate environment. Each begins with an interdisciplinary panel of faculty members and graduate students speaking on a theme of broad
relevance within the division. These discussions then form the basis of subsequent conversations throughout the receptions (Appendix GRA-10).

- In the spring, the annual Graduate Student Appreciation Week, previously a series of social events, has been recast as a Graduate Student Showcase (Appendix GRA-11) highlighting students’ academic and creative achievements. Designed to expose students to one another’s work across departments and disciplines, it includes both a poster session for students from across campus and a campus-wide competition for the best three-minute talk (the Grad Slam, Appendix GRA-12).

- Also in the spring, the Graduate Division held the first annual panel for students on Careers across the Disciplines, featuring faculty members with interdisciplinary profiles who addressed questions such as positioning for the job market and negotiating differing tenure expectations across departments.

The 2011 survey also led directly to several measures to mitigate the challenges graduate students pursuing interdisciplinary work may face in terms of support and time to degree. For example, the Graduate Division instituted annual checks to ensure that courses required for doctoral emphases are accurately posted on the emphasis websites; with sufficient justification department requests to extend time to degree for students doing interdisciplinary work are now accepted; and departments are encouraged to appoint faculty from other departments as affiliates, to allow more flexibility in dissertation committee membership.

In addition, the Graduate Division initiated a program this year, UCSB Crossroads, which provides doctoral students a year-long interdisciplinary research experience that is then extended into the undergraduate classroom through curriculum development and closely mentored teaching (Appendix GRA-13). Crossroads projects require participation of at least three faculty members from at least two departments who team teach a year-long interdisciplinary graduate research seminar and a related Spring Quarter undergraduate course. Three to five graduate students are supported by fellowships in the Fall and Winter Quarters, then serve as teaching assistants in the Spring. This program directly addresses issues of communication, mentoring, the formation of collaborative research groups, and funding for interdisciplinary research. This year, five proposals were submitted, and two were funded. In 2013–14, the Crossroads program will support 10 graduate students from almost all of UC Santa Barbara’s schools and divisions.

UC Santa Barbara is as committed to the review and renewal of interdisciplinary programs as it is to the review and renewal of more traditional programs. The question of how interdisciplinary emphases should be reviewed was considered by the Graduate Council in Fall Quarter 2012. (Departmental programs are periodically assessed through Academic Program Review.) This resulted in the discontinuation of one interdisciplinary emphasis. Proposed interdisciplinary programs—such as the recently approved doctorate in dynamical neuroscience and the professional master’s in technology management, the proposed new doctorate in global studies, and the proposed interdisciplinary emphasis in bioengineering—go through the same stringent administrative and Academic Senate review processes as programs in traditional disciplines.
Determining Career Outcomes of Alumni

As the campus argued in the CPR Report, the strongest initial evidence of success in doctoral education is placement in the student’s desired career, so measuring the effectiveness of graduate programs requires accurate data on the career trajectories of doctoral graduates. Enhancing the campus’s capacity to collect and make use of these data was a goal set by the Excellence in Graduate Education Committee as it looked toward the EER.

Several instruments are already used for this purpose. For example, Doctoral Exit Surveys (Appendix GRA-14) must be completed by all students upon graduation, but these provide an incomplete snapshot of graduate careers, as many students have not finalized their post-graduation plans, and those who have are often beginning postdoctoral fellowships or other temporary positions prior to settling into permanent placements.

In 2011, the University of California initiated an annual Job Outcomes Survey (Appendix GRA-15), which requires that academic departments report the placement of their doctoral graduates of the preceding academic year. While this survey also captures only the earliest stages of a career, it does provide important information. For example, data for graduates in the sciences, social sciences, and engineering can be compared with data from the NSF Survey of Earned Doctorates, as shown in Table GRA-1. Campus data track national trends quite closely, except for an overrepresentation in the nonprofit and government sectors and an underrepresentation in the self-employed category.

<table>
<thead>
<tr>
<th>Type of Employer</th>
<th>NSF (2008)</th>
<th>UCSB (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-year educational institution</td>
<td>41.4%</td>
<td>39.7%</td>
</tr>
<tr>
<td>Private for-profit</td>
<td>32.6%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Private nonprofit</td>
<td>6.6%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Government</td>
<td>9.6%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Self-employed</td>
<td>6.3%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Other</td>
<td>3.5%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table GRA-1: Comparison of graduate employment trends

UC Santa Barbara also conducts broad surveys of alumni, which have the potential to provide data on longer-term career trajectories that could be used to improve the preparation of students for available careers. Alumni surveys were conducted in 2000, 2005, and 2011, but incomplete contact information and low response rates yielded limited data. With this qualification, the surveys show that between 60% and 70% of alumni are employed in education (including K–12), between 15% and 25% have jobs in business and industry, and fewer than 15% are employed in other sectors (Appendix GRA-16). The breakdown of job types within academia show quite similar distributions for 1999 and 2011, with 2005 as an outlier (Table GRA-2).

While intriguing, these data are far from complete and representative, and they suggest the need to improve contact information and increase response rates. Although some academic units keep centralized records of graduate student alumni, in most cases this information is not collected at the department level. The UC Santa Barbara Alumni Office also maintains contact and employment information for some alumni, but does not systematically record job titles or categorize careers. Doctoral placement data are compiled for Academic Program Review, but only for six years preceding the review.
Table GRA-2: Breakdown of employment within academia in 1999, 2005, and 2011 alumni surveys

<table>
<thead>
<tr>
<th>Job type within academia</th>
<th>1999</th>
<th>2005</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure track; 4-year</td>
<td>89</td>
<td>211</td>
<td>198</td>
</tr>
<tr>
<td>Non-tenure track; 4-year</td>
<td>23</td>
<td>48</td>
<td>31</td>
</tr>
<tr>
<td>Permanent faculty; non-4-year</td>
<td>6</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Temporary faculty position</td>
<td>4</td>
<td>38</td>
<td>25</td>
</tr>
<tr>
<td>Postdoctoral fellowship/trainee</td>
<td>11</td>
<td>122</td>
<td>33</td>
</tr>
<tr>
<td>Research-only position</td>
<td>16</td>
<td>17</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>445</td>
<td>328</td>
</tr>
</tbody>
</table>

To obtain more complete data, the Graduate Division has asked academic department chairs to work with faculty to provide career and contact information for doctoral graduates, to use this information to produce statistics on job outcomes, and to make the data available on the departments’ websites. Departments can now see aggregate data on their alumni, in many cases for the first time. As departments complete the UC Job Outcomes Survey, they will update their full lists annually.

In addition, the campus expects to develop ways to keep alumni connected with departments and the campus. Some units (such as the Bren School) already have programs in place for keeping alumni engaged, and these can serve as models for the campus as a whole. Emerging technologies, such as electronic networking, can also play a role. The Graduate Division anticipates a major redesign of the information systems supporting graduate education over the next five years, and alumni career tracking will be incorporated into that project. Meanwhile, the labor-intensive strategy of compiling information from annual department updates will continue.

Improved contact information will make possible a new survey of department doctoral alumni as part of each department’s periodic Academic Program Review. This survey will allow career outcome data to play a pivotal role in program assessment and will motivate departments to maintain current, comprehensive information. Now being developed, the survey will also allow comparison with regional and national benchmarks, as well as continuity with earlier alumni surveys. Questions on program quality and the effectiveness of career training will be included on surveys of recent graduates.

Finally, with improved contact information, the campus would like to conduct a survey of all doctoral alumni. The University of California as a whole is also considering such a survey, and the campus’s plans will depend on UC’s decision, to avoid duplication and survey fatigue among alumni.

Professional Development and Career Preparation

The 2011 UC Job Outcomes Survey demonstrated that approximately 40% of UC Santa Barbara’s doctoral graduates take jobs in business, industry, government, nonprofit organizations, and other employment sectors early in their careers. Although there are significant differences in employment patterns across fields, students in all fields have significant research and communication skills that make them broadly employable across a range of sectors. Identifying and enhancing these skills and acquainting students with the full set of employment options available to them were goals the campus identified for
the EER. UC Santa Barbara’s continuing work to achieve these goals will place its graduate students in a stronger position to find employment suited to their interests, abilities, and situations.

In 2011, the Graduate Division administered the Career Preparation and Outcomes survey to graduate advisors and students to gauge their perceptions of the relative significance of metaprofessional skills (results are in Appendix GRA-17 and 18). Interestingly, the survey showed that students rated social skills—such as establishing a professional network, developing leadership skills, learning to work collaboratively, and maintaining a healthy work-life balance—as most important. The survey highlighted the value of increasing opportunities at the campus level to develop these skills, and it also instigated conversations among chairs, graduate advisors, and faculty members about developing these skill sets.

For many years, departments have offered their own graduate students a wide array of opportunities for professional development and career preparation. In addition to the one-on-one mentoring that is the hallmark of graduate education, examples include involving students in the organization and production of annual conferences; requiring training for teaching assistants; having students participate in editorial activities associated with academic journals; offering classes on professionalism within the discipline; requiring students to present their work in campus colloquia, workshops, or seminars related to academic and nonacademic job markets; providing networking opportunities with alumni and other scholars; and conducting mock interviews. Such closely mentored experiences constitute an invaluable core of students’ professional training.

To complement these department-level professional opportunities, the Graduate Division has established a wide range of programs at the campus level. For example, the Graduate Student Resource Center (GSRC), created in 2009 during work on the CPR, has steadily increased its offerings over the past four years. The center now offers a rich array of workshops, panels, and online resources that students can access throughout their graduate careers. In 2012–13, 94 career and professional development workshops were offered on campus, attended by 1,785 graduate students (Appendix GRA-19). In addition, since 2011, the Graduate Division has sponsored department-level events that bring graduate alumni to campus to talk to current graduate students about the job market (Appendix GRA-20).

To further assist students, the Graduate Division has created a new page on Career and Professional Development on the Graduate Division website that lists seventeen metaprofessional skills essential to both academic and nonacademic careers: http://www.gradiv.ucsb.edu/profdev/index.aspx. For each skill, the website provides students with references to multiple resources on- and off-campus; suggested activities to enhance each skill; and citations of relevant articles in the Graduate Division’s blog, the Grad Post. (For a list of career and professional development articles on the Grad Post, see Appendix GRA-21.)

Workshops on developing skills both within and beyond academia are provided year round by the Graduate Student Resource Center, the UCSB Career Center, the Center for Science and Engineering Partnerships, Instructional Development, the Materials Research Laboratory, the Bren School of Environmental Science and Management, the Technology Management Program, and the College of Engineering. Of these, the latter four organizations typically limit their programming to their own students. Since most of these organizations provide resources aimed at students in STEM disciplines, this year the Graduate Student Resource Center began designing programs explicitly for students in the humanities, social sciences, education, and the arts. Offerings included a panel of deans and chairs
discussing academic job interviews and negotiations; a lecture on nonacademic jobs for non-STEM PhDs by a leading national expert; a series of weekend writing workshops that focused on seminar papers, dissertation proposals, and dissertations; a panel on interdisciplinary academic careers; and a panel of graduating doctoral students who had received job offers of different kinds. In 2012–13, 94 career and professional development workshops were offered on campus, attended by 1,785 graduate students (Appendix GRA-21).

In Winter Quarter 2013, UC Santa Barbara became a member of the Versatile PhD, an online resource to help graduate students identify and prepare for possible nonacademic careers. The campus launch included an all-day visit by founder Paula Chambers, who gave talks to large audiences of STEM and non-STEM students and met with key career and professional staff on campus. There were also widespread campus announcements, presentations to chairs and faculty graduate advisors, announcements to deans and senior administrators, and discussion with the Graduate Council. Regular updates will follow as new online content is delivered. An important goal is to change ideologies about doctoral career tracks and to normalize the concept of nonacademic professions for PhD recipients. Other recent initiatives that enhance the professionalization of graduate students are discussed in the section of this essay on the interdisciplinary environment in graduate education.

Data-Driven Assessment, Discussion, and Decision Making

To ensure the ongoing quality and sustainability of its graduate programs, UC Santa Barbara engages in the regular collection, distribution, and analysis of quantitative and qualitative data on graduate education. These data are foundational to discussions of program quality and resource allocation and are used by administrators, department chairs, department faculty, and the Academic Senate. To increase its capacity to collect and analyze data, the Graduate Division has recently hired an institutional research analyst who works closely with the campus’s central Institutional Research, Planning, and Assessment office (IRPA).

The most extensive process of data collection and review for an individual department occurs in conjunction with Academic Program Review, which incorporates rigorously collected and reported six-year-trend data. These data include admissions figures, student demographics, degree completion rates, placements, funding, time to degree, and other indicators of program vitality and success, which are compared with data for the division and college in which the department is located. A survey of the department’s graduate students is also conducted to produce quantitative and qualitative results; these are compared with campus norms.

Program review data are discussed by a wide range of campus agencies and by external reviewers. The Graduate Council and the graduate dean provide independent analyses, and their input is incorporated into the charge to each department’s external review committee.

Academic program reviews frequently result in recommendations that directly affect the quality of graduate education, in addition to informing decisions about program size, faculty hiring, and other programmatic matters. One-year and three-year follow-up reports track improvements; resource allocations are closely linked to demonstrated progress. Recent Academic Program Reviews have resulted in directives to departments to restructure graduate curricula, improve communication, and address advising or climate issues. (Program review is discussed extensively in the campus’s CPR Report; the
effectiveness of the review process, and modifications to it, are further examined in the Program Review essay in this EER Report.)

In addition, IRPA and the Graduate Division annually compile quantitative data on each department that are distributed to divisional deans and the Executive Vice Chancellor (Appendix GRA-22) in the form of a standardized departmental graduate report. The graduate dean meets with each divisional dean to discuss the data, department quality, and other issues raised by the report. These discussions in turn provide the empirical basis for consultation throughout the year on matters such as funding allocations, programmatic changes, and admissions.

In spring 2013, the Graduate Division began working with each department to create statistical profiles of their graduate programs to be placed on the Graduate Division website for prospective students. Several preliminary mock-ups were generated and discussed with the Executive Vice Chancellor and divisional deans. These conversations revolved around the role of data in self-presentation of departments and of the impact that particular statistics might have on potential graduate applicants. The importance of providing adequate context for statistics led to a decision to include comparative national data when available. Sample statistical profiles were sent to each department. Subsequent discussions between departments and Graduate Division staff as to which statistics each department considered appropriate, given the context of the field, led to direct discussions about the numerical figures themselves, including identifying areas for future improvement. Other sources of regularly collected data used by campus agencies include the annual Planning Data Book, http://bap.ucsb.edu/IR/PDB/index.html; the Doctoral Exit Survey (Appendix GRA-14); independent surveys by particular departments, such as the Bren School; and course evaluations for all graduate courses, which—together with service on graduate committees—are an integral part of faculty members’ academic personnel cases for merit increases and promotions.

Conclusions

As a result of the above-described activities and programs, UC Santa Barbara is poised to build on its tradition of excellence in graduate education and make already strong programs even better. Using PLOs as the foundation, graduate programs can better reflect on how their courses and degree requirements meet their explicit objectives and how their programs can improve to better serve students in achieving core knowledge and competencies. The campus has expanded the opportunities for graduate students to be involved in the interdisciplinary research that is the hallmark of UC Santa Barbara. Events designed to increase cross-disciplinary interactions—such as interdisciplinary panels, student competitions and Crossroads classes—will continue to inspire graduate student interest and participation across the campus. As a result of better alumni tracking, the campus will learn more about the careers that graduates enter and how to continue innovating to equip students to succeed in their short- and long-term careers.

The high quality of UC Santa Barbara’s graduate programs is maintained and enhanced by continual processes of data-driven assessment and renewal. These processes are built into our campus infrastructure at numerous levels and are regularly refined and expanded. UC Santa Barbara is committed to ensuring that graduate students have access to a wide range of opportunities to experience the interdisciplinary, collaborative, and dynamic research environment that characterizes the campus, and that they are well prepared to find employment both within and beyond academia.
Student Success

This essay builds on the student success essay in UC Santa Barbara’s 2011 Capacity and Preparatory Review (CPR) report by describing how the key student success indicators of retention, graduation, and academic probation rates have changed, with particular attention to low-income, first-generation college students. The essay then discusses a new analysis that examines the contribution of the campus tutorial service (known locally as CLAS, for Campus Learning Assistance Services) to student success. The CLAS study, together with similar planned studies, will help the campus to identify the most effective strategies to support student learning and success. In addition, this essay reviews recent data from the Senior Exit Survey, which provides another lens through which to examine student success. Finally, it gives an overview of the co-curricular assessment plan being developed by the Division of Student Affairs.

Changes Since the CPR Report

In the 2011 CPR report, the essay on student success documented the high rate of success the campus achieved in retaining and graduating low-income, first-generation college students eligible for the services of the Educational Opportunity Program11 (EOP). Over the past five years, the proportion of incoming freshmen and transfer students who are EOP eligible has been growing. As of fall 2012, 29% of UC Santa Barbara undergraduates were designated EOP eligible. Since the CPR report, the campus has continued to evaluate trends in retention and graduation rates for EOP and non-EOP students.

Findings reported in the CPR student success study prompted a number of changes. First, academic advisors in the College of Letters and Science have reintroduced the practice of holding office hours in EOP offices, to make it easier for EOP students to seek academic advice and to improve collaboration and communication between the two offices. Second, the College of Letters and Science has begun an online orientation program for students—including international students—who cannot come to regular orientation, to provide academic advice on course selection well before they arrive on campus. Finally, the institutional research, planning, and assessment unit, in cooperation with the Office of Financial Aid, has instituted a survey to better understand why students take a break from or leave UC Santa Barbara prior to degree completion. (It is expected that there will be enough responses to shed some light on these issues after the 2012–13 academic year.)

Review of Student Success Indicators

Overall, degree completion rates for undergraduate students remain favorable when compared with the graduation rates for American Association of Universities (AAU) peer institutions. The latest comparative data available show that 66% of UC Santa Barbara’s 2005 first-time freshmen cohort completed degrees within four years, compared with the AAU public-institution average of 54%. The UC Santa Barbara six-year graduation rate for this cohort was 80%, slightly above the AAU public institution average of 78%.

The proportion of UC Santa Barbara’s freshmen-entry undergraduates completing degrees in four years or less has seen a decade-long increase, from 45% for the cohort entering in 1997 to 69% for the cohort entering in 2008. The six-year graduation rates have increased from 73% for the cohort entering in 1997

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11 The Educational Opportunity Program provides mentorship, counseling/advising, support service referrals, and social/cultural programming to any UC Santa Barbara student wishing to participate in its services, though only low-income, first-generation students are designated EOP eligible upon admission to the University. In this essay, only EOP-eligible students are included in the EOP group discussed.
to 80% for the cohort entering in 2006. Examining these rates by EOP status reveals impressive gains for EOP and non-EOP students alike. The EOP student four-year graduation rate increased from 30% for the cohort entering in 1997 to 61% for the cohort entering in 2008. Although a gap remains between the four-year graduation rates of EOP and non-EOP students, the trend data indicate this gap is closing in the most recent freshmen cohorts.

Six-year graduation rates declined slightly for EOP students entering in fall 2005 and 2006 (72%) compared with EOP students entering fall 2002 to 2004 (74%). The six-year graduation rates for non-EOP students from these cohort groups have remained steady at 82%. While even a slight downturn in EOP student graduation rates might be cause for concern, given the impressive gains in four-year graduation rates among EOP students entering in fall 2007 and fall 2008, UC Santa Barbara expects that EOP student six-year graduation rates will bounce back to previous levels, or higher, in the coming years.

Increasing proportions of transfer students are also completing degrees within the expected time. The latest data, for transfer students entering in fall 2010, show that 70% completed degrees within two years of first matriculation. This is the latest point in a significant rising trend in two-year completion rates, starting from 41% for the transfer cohort entering in fall 1999. The increase is similar for EOP and non-EOP transfer students. The two-year graduation rate for EOP transfer students was 36% for those entering in fall 1999; it has risen to 66% for the cohort entering in fall 2010. Among non-EOP students, two-year graduation rates have risen from 42% for the cohort entering in 1999 to 71% for the cohort entering in 2010.
While the majority of transfer students now graduate within two years, a significant number still take two to three years to complete their degrees. For the fall 2009 cohort, 82% of EOP students completed their degrees within three years, identical to the rate for non-EOP transfer students from that cohort.

Academic Probation and Retention

In the two years since the CPR report, the proportion of freshmen-entry EOP students on academic probation in the first year of study has declined, from 24% for the 2007, 2008, and 2009 cohorts to 19% for the cohorts entering in 2010 and 2011. While these academic probation rates are still noticeably higher than those for non-EOP students in 2010 and 2011 (7% on academic probation in the first year), it is encouraging that the gap between the two groups is closing.\(^{12}\)

First-year academic probation rates among transfer-entry EOP students have dropped by 10 percentage points: 25% for the cohorts entering in 2007, 2008, and 2009 compared with 15% for the cohorts entering in 2010 and 2011. These academic probation rates are not much different from the 12% academic probation rate among non-EOP transfer-entry students in 2010 and 2011.

The proportion of freshmen-entry EOP students retained to the second year of study has risen slightly since the CPR report (89% for the cohorts entering 2007, 2008, and 2009; 90% for the cohorts entering in 2010 and 2011); second-year retention rates for non-EOP students have held steady at 92%. Transfer-

\(^{12}\) The first-year academic probation rate gap among freshmen-entry EOP and non-EOP students was 15 percentage points for the cohorts entering in 2007 to 2009 and 12 percentage points for the cohorts entering in 2010 and 2011.
student second-year retention rates have improved a bit more noticeably. Among EOP transfer students, 88% of the cohorts entering in 2007, 2008, and 2009 were retained to the second year of study, compared with 92% of the cohorts entering in 2010 and 2011. Non-EOP transfer student retention rates have increased from 89% for the cohorts entering in 2007, 2008, and 2009 to 91% for the cohorts entering in 2010 and 2011.

Co-Curricular Assessment
In the 2012–13 academic year, the Student Academic Support Services cluster in the Division of Student Affairs began to develop a pilot project in coordinated assessment. Five departments are taking part: Early Childhood Care and Education Services, Campus Learning Assistance Services (CLAS), Career Services, the Disabled Students Program, and the Educational Opportunity Program. The goals for the pilot project are to create a culture of assessment; to perform a significant review of data, software programs, and technology resource needs; to develop partnerships across campus to fulfill these data and IT system needs; to improve information sharing as part of decision making and strategic planning; and to develop recommendations for a larger, coordinated, systematic division-wide assessment.

CLAS serves as a model for other Student Affairs departments engaging in assessment planning at UC Santa Barbara. CLAS staff has written learning outcomes using the ABCD method created by Knirk and Gustafson (1986). The staff will also create an online process to measure the first learning outcome (“by participating in a CLAS instructional group, participants will increase their confidence in understanding course material”), using a modified version of its standard evaluation form. In collaboration with the institutional research, planning, and assessment (IRPA) group, CLAS is also collaborating on an assessment project to further understand how usage data can be aligned with institutional data to assess the impact of its services on student success. Preliminary results of this study are discussed in the next section.

Campus Learning Assistance Services Assessment
CLAS provides a variety of offerings to promote success among undergraduate students, including group tutorial sections, study skills workshops, language and writing labs, and math/science drop-in labs. In fall 2012, CLAS and IRPA began a collaboration to study the relationship between participation in CLAS tutorial services and student success, measured by grades in specific courses and by longer-term outcomes such as degree completion.

To this end, CLAS provided IRPA an extract from the tutorial registration system that detailed all group tutorial contact hours, drop-in tutorial contacts, study skills workshop contacts, and tutorial appointments for UC Santa Barbara students in academic years 2006–07 through 2011–12. This information was then linked, on a student-course level, with IRPA databases. The resulting rich data set makes it possible to explore the correlation between students’ use of CLAS and student success indicators for different segments of the UC Santa Barbara student population. While the data allow for the exploration of correlations between desired student success outcomes and CLAS participation, they cannot be used to confirm a causal relationship. The information presented in this essay draws on the initial studies, which focus on distinctions between EOP and non-EOP students. (Many additional studies will be completed in

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the coming years, including studies which will seek to understand why some students do not persist in their usage of CLAS and why others choose not to attend CLAS at all.\(^\text{14}\)"

**CLAS USAGE PROFILE.** CLAS assists approximately two-thirds of undergraduate students at some point in their time at UC Santa Barbara, making it one of the most broadly used co-curricular services on campus. Participation in group tutorial sections among new freshmen in their first year of study has been increasing over the period examined, from 50% for the 2007 cohort to 58% for the 2011 cohort. EOP students tend to use CLAS services at higher rates than non-EOP students, especially drop-in tutorials, but also group tutorial sections. Students with lower SAT scores tend to participate in CLAS services at much higher rates than students with high SAT scores.

Group tutorial sections are the most heavily used CLAS offering, as measured by student contact hours or student participation rates. Group tutorial sections are linked to specific courses, mainly in the fields of science and mathematics.\(^\text{15}\) The campus’s initial studies focused on understanding the relationship between CLAS group tutorial contact hours and grades in chemistry courses.

**CLAS PARTICIPATION AND STUDENT SUCCESS IN CHEMISTRY COURSES.** The successful completion of UC Santa Barbara’s general chemistry course sequence (CHEM 1A/B/C) is an essential step toward completion of many undergraduate programs in the sciences and engineering. Because this sequence is among the most heavily enrolled courses for first-year students, it seemed useful to begin the study here. To carry out the analysis, data on CLAS tutorial contacts were matched with student course grades in Chemistry 1A/B/C and Chemistry 109A/B/C for a period covering three full academic years (2009–10 through 2011–12).

<table>
<thead>
<tr>
<th>Course (n = Freshmen Entry Course Enrollments)</th>
<th>% Not Attending CLAS Group Tutorial Sections</th>
<th>% With 1-15 CLAS Group Tutorial Hours</th>
<th>% With 16 or More CLAS Group Tutorial Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A (n = 5,996)</td>
<td>47%</td>
<td>25%</td>
<td>27%</td>
</tr>
<tr>
<td>CHEM 1B (n = 4,283)</td>
<td>38%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>CHEM 1C (n = 3,220)</td>
<td>34%</td>
<td>30%</td>
<td>36%</td>
</tr>
<tr>
<td>CHEM 109A (n = 3,019)</td>
<td>28%</td>
<td>30%</td>
<td>42%</td>
</tr>
<tr>
<td>CHEM 109B (n = 2,523)</td>
<td>23%</td>
<td>31%</td>
<td>45%</td>
</tr>
<tr>
<td>CHEM 109C (n = 1,557)</td>
<td>27%</td>
<td>33%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Table STU-1: Participation in CLAS group tutorial sections among freshmen-entry students in UC Santa Barbara chemistry courses, 2009–10 through 2011–12

Initial exploration of the data revealed that a little more than half (53%) of freshmen-entry students in CHEM 1A participated in CLAS group tutorial sections over the three academic years studied (6% of the enrolled students had drop-in contact hours for these courses, and 1% of the students had been seen in CLAS for individual tutoring in chemistry). Group tutorial participation rates in CLAS chemistry sections generally increased with each successive chemistry course.

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\(^\text{14}\) Other studies examine additional CLAS services, such as drop-in tutorial sessions and the impact of language labs for ESL students, and provide a more detailed look at the correlation between CLAS participation and retention and graduation rates for various segments of the UCSB population, including transfer students.

\(^\text{15}\) In academic years 2009–10 through 2011–12, 37% of all group tutorial contact hours were in chemistry (CHEM 1 and CHEM 109 sequences) and 27% were in mathematics (MATH 3, MATH 5, and MATH 34 sequences). Adding physics and astronomy, biology, and statistics accounts for 94% of all group tutorial contact hours.
To derive an estimate of the relationship between CLAS group tutorial participation and course grades in chemistry, ordinary least-squares (OLS) regression was used to regress course grades on a set of predictor variables (here conceptualized as control variables), including the student’s high school GPA, SAT-R test scores in math and critical reading, gender, ethnicity, first-generation college status, and Academic Performance Index (API) of the student’s high school, if available. Regression models for CHEM 1B and higher included the student’s grade or average grades in prior UC Santa Barbara chemistry courses. Participation in CLAS was entered into the regression models as a series of binary variables representing the number of group tutorial contact hours the student had for that course (e.g., none, 1–5 hours, 6–10 hours, 11–15 hours, etc.).

Figure STU-3: Estimated change in CHEM 1A grade points by CLAS group tutorial hours for EOP students. *Indicates a statistically significant effect (p < .05).

Results of the regression analysis reveal a consistent, substantial, and statistically significant relationship between higher levels of CLAS group tutorial contact hours and the grade received in chemistry courses. When separate regression models were analyzed for EOP and non-EOP students, the results show that the impact of CLAS group tutorial participation is generally greater for EOP students than for non-EOP students. To illustrate the relationship between CLAS group tutorial participation and grades, the charts above and below show the estimated change in CHEM 1A grade points by the number of CLAS group tutorial hours for EOP and non-EOP students.¹⁶

¹⁶ Data for charts are based on OLS regression models for letter grades assigned to freshmen-entry students in CHEM 1A sections occurring fall 2009, fall 2010, and fall 2011. Models exclude students repeating CHEM 1A. The estimated effects shown are relative to students who did not attend CLAS group tutorials. EOP model adjusted R-square is .3048, non-EOP model adjusted R-square is .3189.
Analyses of assigned letter grades in the remaining chemistry courses (CHEM 1B, 1C, 109A, 109B, and 109C) yield fairly consistent results. The benefits of CLAS group tutorial participation in chemistry are greatest for students who attend 16 hours or more per quarter.\(^{17}\) (Most group tutorial sections meet for about one hour twice a week during the 10-week session. Additional time in tutorial sections can be attributed to attending exam study sessions.)

To gauge the longer-term effects of CLAS participation on student success, IRPA has conducted an initial study examining the 6-year completion rate of fall 2006 freshmen-entry students declaring a Science, Technology, Engineering, or Math (STEM) major upon entry.\(^{18}\) The results of this study show that participation in CLAS science-related tutorial sections in the first year of study is significantly related to the successful completion of a STEM major for both EOP and non-EOP students. The chart below summarizes the relationship for EOP students. (This study will be replicated on additional cohorts when data become available.)

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\(^{17}\) Although the chart for non-EOP students reveals a statistically significant negative effect for students attending 6–10 hours of CLAS tutorial, we did not find similar effects in models for other chemistry courses. In those models the coefficients for low levels of CLAS participation are either not statistically significant or are significant and in the expected direction, but with generally small effects.

\(^{18}\) This study was further limited to the subset of 2006 freshmen-entry STEM majors retained to their second year of study in a STEM major. These restrictions yielded a population of 170 EOP student STEM majors and 666 non-EOP student STEM majors.
Figure STU-5: Completion rates for EOP student STEM majors entering fall 2006 by number of science-related CLAS group tutorial hours in the first year of study

Significantly, the data show that EOP students admitted to a STEM major who did not attend any science-related CLAS tutorial sections in their first year of study were far less likely to have attained any UC Santa Barbara degree (STEM or non-STEM) by the end of their sixth year. In contrast, students with even relatively low levels of participation in CLAS tutorial sections (1–39 hours) were far more likely to earn a non-STEM degree, though STEM degree completion rates for these groups were still low. Finally, the proportion of EOP students completing a STEM degree very nearly doubles for the groups who had the most science-related CLAS tutorial hours (40 or more) in their first year of study. These results serve to confirm further the correlation between CLAS participation and student success.

Next Steps for Co-Curricular Assessment

The next steps for Student Affairs will be to implement a division-wide assessment effort (Appendix STU-1). Each department will be asked to outline its goals and desired student outcomes, as well as an assessment strategy—including a plan for current and future assessment efforts, evaluation analysis, and reports—by the end of academic year 2013–14. Assessment plans will be implemented in academic year 2014–15. An evaluation of division-wide assessment progress will be conducted during academic year 2015–16.

Student Affairs departments currently engage in a wide range of assessment activities and anticipate that the coordinated effort to develop assessment plans across the division will result in even greater opportunities to inform practice and policy at the department, division, and campus-wide level.
Self-Reported Student Satisfaction

While the data presented here provide clear evidence that UC Santa Barbara retains and graduates a very high proportion of its freshmen-entry and transfer-entry students, and that student use of one important co-curricular service is significantly related to student success, these impressive statistics do little to elaborate on the student experience. However, when coupled with results from the recent Senior Exit Survey (conducted spring 2011), these statistics begin to educe a more complete picture.

The survey data reveal that the vast majority of graduating seniors (90%) are satisfied with their overall UC Santa Barbara experience, and 88% are satisfied with the time it has taken them to achieve their baccalaureate degree. These satisfaction rates are 10 percentage points higher than reported by the 2004 class of graduating seniors. When compared with student satisfaction data reported by each UC campus in the UC accountability report (see http://accountability.universityofcalifornia.edu/index/4.5), these data show that UC Santa Barbara has the highest proportion of students in the UC system who say they are satisfied or very satisfied, and the lowest proportion who describe themselves as dissatisfied. (No comparable data are now available from AAU peer institutions.)

An equally impressive majority of graduating seniors also report that UC Santa Barbara has prepared them for the job market (84%) or graduate or professional school (93%). When these survey data are examined by EOP status, it is highly encouraging to see very little difference in key satisfaction rates between EOP and non-EOP students.

Assessing Co-curricular Contributions to Student Success in the Future

In the years ahead, UC Santa Barbara’s institutional research, planning, and assessment unit will continue to examine the relationship between campus co-curricular activities and long-term student success as measured by time-to-degree, retention, and graduation rates, as well as by self-reported gains in knowledge and skills based on survey data. For example, the campus plans to extend the analysis of CLAS services by examining the impact CLAS study skills workshops have on gains in related skills and behaviors reported by students in the UC Undergraduate Experience Survey (UCUES). A new survey of international students about the effectiveness of the newly implemented online orientation program will be completed and analyzed. Finally, data from the recently implemented stop-out survey will be examined and discussed with the Financial Aid Office and other student service units to better help students who interrupt their studies at UC Santa Barbara. UC Santa Barbara is committed to continuing a high level of student success, paying particular attention to the factors influencing EOP-student success. Plans for ongoing evaluation and feedback are in place to improve institution-level outcomes for EOP and non-EOP students alike.
Academic Program Review

This essay briefly describes UC Santa Barbara’s Academic Program Review process, which was discussed in a detailed special topic essay in the 2011 CPR Report and praised by the WASC Visiting Team as a “mature, well-developed, and well-executed program for Academic Program Review that will be strengthened as new measures of student learning are incorporated into the process.” The essay then addresses how UC Santa Barbara is embedding analyses of program learning outcomes and assessment into its systematic, evidence-based Academic Program Review. Next, the essay provides specific examples of how program reviews serve to improve academic degree programs and assure educational effectiveness. A final section points to some plans for further improvements to the process.

Introduction

UC Santa Barbara’s long-standing process of Academic Program Review was discussed in detail in the 2011 CPR Report to illustrate the campus’s capacity for evaluating the effectiveness of educational programs and assuring ongoing quality and improvement. As that essay described, the program review process at UC Santa Barbara is distinguished by its integration of the Academic Senate’s responsibilities for educational policy and academic programs with the administration’s responsibilities for academic planning and resource allocation. Reviews exercise the principles of shared governance; Academic Program Review is carried out by the faculty under the auspices of the Executive Vice Chancellor (EVC), UC Santa Barbara’s chief academic officer.

The aim of periodic program review is to assess and improve academic quality in each degree-granting academic unit. Reviews are rigorous and comprehensive, examining a department’s full range of attributes and activities, including the quality and productivity of the faculty, the educational effectiveness of graduate and undergraduate programs, the place and prominence of the department within its discipline, and the focus and potential of its plans for the future. Most important, program reviews provide a mechanism for departmental reflection and in-depth examination of goals and outcomes, while providing valuable information for departmental improvement and broader campus planning.

Program reviews are systematic and evidence-based. An extensive departmental data profile is developed for each review, which compares the department with its disciplinary division and college on various indicators over a six-year period. Student data include measures of diversity, selectivity, student performance, and retention and graduation rates, and, at the graduate level, job placement. Aggregated results from student evaluations of courses and instruction are included, as are the results of systematic surveys of graduate and undergraduate students that are conducted for each review.19 Review criteria specified in the campus’s program review procedures provide consistent direction for departmental self-assessments and guidance to visiting external review committees.

Reviews are overseen by the Program Review Panel (PRP) of 10 faculty members and two student representatives, and administered by two staff members. The Panel is advised by four Academic Senate committees—the College Faculty Executive Committee (for the college of the department under review),

19 These surveys ask students to rate such items as quality of instruction, curriculum, advising, academic climate, opportunities for professional preparation, and other aspects of the students’ program. Results are compared with campus norms.
the Undergraduate Council, the Graduate Council, and the Council on Planning and Budget—and by the academic, undergraduate, and graduate deans, all of whom provide advice that informs both PRP’s charge to the external review committee and, following the external review, an assessment and recommendations for further action that PRP may include in its final report. The process takes two years. Departments are then required to submit one-year and three-year progress reports to the Executive Vice Chancellor, who may require additional reports to ensure that appropriate changes have been made.

As the campus’s primary mechanism for assuring the quality and continuing improvement of academic programs, Academic Program Review is a logical locus for ensuring that academic departments are actively engaged in assessing student learning in the major. To integrate the assessment of student learning into program reviews, the campus has made the changes to its academic review procedures that are described in the following section of this essay.

**Integrating Learning Outcomes Assessment into Academic Program Review**

To integrate the assessment of student learning into program reviews, the campus has modified and strengthened the review process at four stages: the data compiled for the review, the departmental self-study, the charge to the External Review Committee, and the planning and actions that result from the review. These changes will affect departments beginning their review preparations in July 2013; their external reviews will occur in 2014–15. The first three changes will be reflected in the Program Review Data Notebook, which serves as the foundational document for each review.

**Data**

Each data notebook compiles the data indicators and survey findings prepared for the review and the department’s self-study and plan for further development and improvement. A new section of the notebook, “Program Learning Outcomes and Assessment,” will present for both undergraduate and graduate degree programs (1) a list of PLOs for each degree; (2) a table, adapted from WASC’s Inventory of Educational Effectiveness Indicators, that describes the department’s process for assessing learning in the degree programs, and (3) a summary of the assessment studies the department has undertaken since its last program review. Although it may be a year or two before departments have findings from their assessment of specific learning outcomes, virtually all departments already conduct some form of program assessment.

**Self-Study**

Guidelines for preparing the departmental self-study currently ask departments to critically examine the goals, structure, and content of their degree programs; reflect on evidence of student success; and identify areas for improvement. These questions have been revised to include critical discussion of PLOs, the rationale for any changes made to them, the findings of recent assessment studies, and any changes the department has made or proposes to make as a result. Questions that guide the department’s development plan have been expanded to include plans for future assessment studies.

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20 These changes are documented in Appendix APR-1.

21 For example, the faculty is expected to examine notebook data reflecting time to degree, retention and graduation, student progress through the major or graduate milestones, grading patterns, and other indicators of program effectiveness.
Charge to the External Review Committee

To create a charge for an External Review Committee (ERC), the campus Program Review Panel customizes a standard set of questions to address specific issues. The template for the charge has been revised, in both the undergraduate and graduate program sections, to pose questions that ask the ERC to review the department’s PLOs in relation to disciplinary norms (i.e., Do the undergraduate program PLOs reflect appropriate expectations for a rigorous undergraduate major in [name of discipline]? Do the graduate program PLOs reflect appropriate expectations for a graduate program in [name of discipline] in a major research university?) Additional questions ask the ERC to comment on the department’s assessment studies, how the faculty have used the results, and the department’s proposed assessment studies. These questions may be given greater or lesser emphasis and specificity depending on the advice received from campus reviewing agencies, especially the Undergraduate and Graduate Councils, in their review of the notebook that takes place before PRP drafts the final charge.

External Review Report and Subsequent Follow-up

External reviewers bring an informed disciplinary context to their evaluation of departments, and their comments on PLOs and the faculty’s engagement with learning outcomes assessment will provide credible peer guidance to departments and the campus for improving learning in the major. Depending on the ERC’s evaluation, the Undergraduate and Graduate Councils and other reviewing agencies may each recommend that a department improve or intensify its work to assess learning outcomes. Based on such advice, PRP may recommend to the Executive Vice Chancellor that follow-up reviews pay particular attention to a department’s progress in this area. A department whose learning outcomes or assessment studies are considered weak would be encouraged to seek guidance from faculty assessment liaisons on the Council on Assessment and from staff in the Assessment Research Group. The Undergraduate and Graduate Councils have responsibility for monitoring the quality of academic programs and are empowered to act should they conclude that a program is seriously deficient, although this would be a rare event. Most programmatic improvements and innovations originate with the faculty themselves, as they view departmental degree programs as foundational to department quality and reputation.

Closing the Loop: Using Program Review Findings

The essay on Academic Program Review in the campus’s CPR Report focused on the systematic and evidence-based process of review. Here the campus illustrates how the findings of program reviews have been used to improve departments and degree programs and assure educational effectiveness.

Computer Science

The 2010–11 External Review Committee (ERC) for the Department of Computer Science described a productive, well-funded, and highly collaborative department that had moved into the top 20 departments nationwide while paying “significant attention to the quality and efficacy” of its undergraduate program. Prior to the review, the department had made changes to the undergraduate curriculum—restructuring the lower division, introducing an innovative teaching practice, and piloting a new advising program—and was assessing the results. After analyzing issues raised in the department’s self-study, the ERC recommended that the department also (1) eliminate the pre-major, which the ERC saw as a deterrent to top students and no longer needed to assure that lower-division students had the requisite knowledge and skills to succeed in the upper division; and (2) re-examine the cross-disciplinary Computer Science BA program, which the department and the ERC agreed was not achieving the goal of broadening student
participation in the discipline. Following faculty study, the department accepted both recommendations. In its recent one-year follow-up (Appendix APR-2), the department notes that, while it is too early to evaluate the effect of eliminating the pre-major, early indications suggest it has resulted in a stronger entering class as measured by GPA and test scores. The department also suspended admission to its BA program while it considers other means of meeting student demand for basic proficiency in the discipline. In view of the increasingly important role that computing plays in other disciplines, the department is considering alternative approaches to providing nonmajors with courses in computational thinking and multidisciplinary problem solving using computers, including special introductory courses and a new Computer Science minor. The department will describe its progress in its three-year follow-up report.

Spanish and Portuguese

In response to its external review in 2005–06, the Department of Spanish and Portuguese undertook a range of initiatives, including extensive revisions to its graduate program, a redefinition of its programmatic scope and identity, and changes in governance. Three follow-up reports to the Executive Vice Chancellor detail the department’s progress in achieving its goals (Appendix APR-3). One change to the graduate program is a new mentorship system that is facilitating student progress through the program. Other changes to course requirements and PhD qualifying exams in all three of the department’s doctoral tracks (Hispanic Literature, Portuguese and Brazilian Literatures, and Iberian Linguistics) add breadth to student training while shortening time to degree. In the literature tracks, the new exam format assesses the student’s potential to conduct scholarly research in a specific field as well as her or his overall competence in the discipline. Consequently, students who pass the qualifying exams are better equipped to design and teach a broad variety of courses, and thus better prepared for an increasingly competitive job market. To assess the success of program changes, the department surveyed graduate students and received strong positive feedback along with additional suggestions.

Other Results

Other examples of programmatic change and improvement prompted by program reviews are described in the one-and three-year follow-up reports that departments must complete. For example, the 2008–09 program review of French and Italian resulted in a new specialization in French literary studies within the Comparative Literature PhD program and a suspension of admission to the French PhD program. In presenting the proposed specialization to the Graduate Council for approval, the faculty noted that it is consistent with the ERC’s recommendation to translate the strengths of the French faculty into an interdisciplinary curricular program that fits well in the context of the overall academic culture of UC Santa Barbara and reflects academic, demographic, and budgetary trends. In the sciences, the 2007–08 ERC for the Department of Ecology, Evolution and Marine Biology recommended addressing structural issues in lower-division requirements that were judged to affect student enrollment, progress, and success in the department’s four specialized majors. The department subsequently requested and received approval from the Undergraduate Council to make curricular changes intended to “modernize, streamline, and align the majors so that the common course requirements and alternative pathways through the majors are more visible to students.” While changes such as these may result directly from External Review Committee recommendations, others originate from the faculty-wide reflection and discussion that occurs around a review. In a few cases, when the ERC report is not as insightful as the campus had hoped, departments undertake, and are encouraged by campus reviewing agencies, to solve problems and initiate improvements.
In addition to making recommendations for improvement in degree programs, program review reports are also expected to identify key departmental strengths and opportunities to build on them in the context of the campus’s Strategic Academic Plan. Reports can affect decision-making and resource allocation at all levels of the institution—for example, in the choices departments make in their hiring plans, the support deans and Academic Senate committees lend to those plans, and the allocation of faculty positions by the EVC in consultation with the Council on Planning and Budget (CPB). In this respect, program reviews inform decisions by the EVC and deans about how best to use limited resources to maintain the strengths of strong departments and improve weaker ones.

Next Steps
To maintain the effectiveness of the program review process over time, the Academic Program Review office in consultation with the Program Review Panel anticipates (1) adding data elements that will strengthen capacity for assessing both graduate and undergraduate programs, (2) achieving efficiencies in the review process, and (3) strengthening the assessment of the review process itself. These changes include:

- Incorporating into program review the findings from UCUES (University of California Undergraduate Experience Survey), a goal discussed in the campus’s CPR Report. Low numbers of respondents by discipline have limited its use. Recently, however, Institutional Research carried out a pilot UCUES analysis comparing Molecular, Cellular and Developmental Biology students with biological sciences majors at other UCs and at other AAU institutions, which produced useful findings. The IR and APR staff plan to further explore how this rich source of data can be systematically used in program review.
- Conducting a new career outcomes survey of department doctoral alumni as part of each department’s program review. Described in the essay on graduate education earlier in this report, the survey will enhance understanding of the long-term career trajectories of graduate alumni and allow comparison with regional and national benchmarks. Surveys of comparatively recent graduates will include questions on program quality and the effectiveness of career training.
- Examining the feasibility and value of adding doctoral exit survey data to program reviews. The results would provide students’ assessment of various aspects of their program at the point of graduation. (This survey would supplement the program review survey of enrolled graduate students.)
- Making assessment of the review process itself more systematic. For the next few years, PRP will monitor annually the effectiveness of changes made to integrate student learning assessment into the process and make further adjustments as needed. Also, as the campus reported in the CPR Report, PRP regularly examines the effectiveness of the review process, seeking comments from campus participants as well as External Review Committees. Over time, this consultation has led to changes in the structure of reviews, the data, the self-study, the charge letter, site visits, and avenues for student participation. To provide more systematic feedback, the staff expects to pilot a survey that can be administered to review participants and analyzed on a regular schedule.
- Creating a document management system that will allow review participants to access information and data more efficiently. The system will also serve as a comprehensive source of information for departments under review, archive significant review documents, and more systematically document the follow-up process.
Integrative Essay:
Assessing and Sustaining Academic Excellence

This essay reflects on UC Santa Barbara’s approach to the opportunities provided by WASC reaccreditation to examine and improve educational effectiveness in each of the campus’s academic programs. The predominant theme emerging from the campus’s work on general education, learning in undergraduate majors, and excellence in graduate education is the commitment of faculty and staff across the campus to using data-driven assessment to ensure that teaching and learning at all levels—within and across disciplines—continue to improve. Their work is sustained by an infrastructure that provides support, expertise, and incentives for innovation and progress. At the same time, the campus has expanded studies of student success, and Academic Program Review will systematically examine every academic unit’s assessment of program learning outcomes and its use of results to ensure continuous improvement.

Approach and Purpose
UC Santa Barbara’s approach to educational effectiveness in general, and to establishing and assessing student learning outcomes in particular, reflects its mission of excellence in teaching and research as well as its tradition of faculty participation in governance. The questions asked by the Educational Effectiveness Review are research questions: How can faculty better understand what students learn—and what they need to learn to fulfill their aspirations? How can the campus use data about learning to help students grow in intellectual prowess, in the capacity to understand and assess information, and in the ability to create and transmit knowledge that is original, valuable, and humane?

Over the multiyear process of asking and answering these questions, an important goal has been to build a collective understanding of assessment across the campus while respecting departmental differences. The faculty, staff, and administration have all contributed to this undertaking, which at a research university can be seen as a data-driven approach to helping improve the quality of teaching and learning. Faculty members have invested substantial energy in considering, discussing, re-considering, and articulating the knowledge and skills their students need to master. They have gathered their own data or drawn on data from the campus’s institutional research analysts to explore what makes learning robust and useful. To facilitate this work, the campus has created organizational structures and new roles for faculty and staff to help departments further develop approaches to assessment that honor disciplinary perspectives and that provide a sustainable source of useful information about students’ knowledge, skills, and growth to guide teaching and curriculum improvements.

Common Themes and Institutional Learning
The Campus Needed a More Systematic Approach to Improving Student Learning

Through strategic management of resources, UC Santa Barbara has maintained and further enhanced its reputation as an outstanding research university, despite reductions in faculty, staff, and budgets due to the severe economic downturn and unsparing state budget cuts. Several departments consistently appear near the top of world rankings, the finest young professors join the faculty, a steadily increasing number of undergraduates earn their degrees in four years—and over half collaborate with faculty members on
original research or creative projects. After years of austerity, campus departments and the campus as a whole are poised to achieve even greater success as the financial outlook improves.

Interest in improving teaching and learning at UC Santa Barbara is high. Teaching evaluations and curricular innovations are important factors for faculty advancement. Regular, iterative, in-depth reviews of academic programs that influence strategic planning and the allocation of institutional resources, studies of student success and the factors that shape it, and oversight provided by the Academic Senate’s Graduate and Undergraduate Councils have long helped guide, accelerate, and sustain educational improvement.

When the campus examined its educational effectiveness through the lens of WASC standards, it saw two advances that would build on this foundation and lead to better student learning. First, expectations for student learning needed to be more explicitly stated. Second, assessment of student learning outcomes could be accomplished in a more structured, systematic way—one that would obtain and use more evidence of learning in considering how individual faculty members, departments, and the institution as a whole can better educate students.

Other ways to improve student learning were also identified and addressed. More opportunities have been created for graduate researchers in different disciplines to hear about each other’s work, more funding and more appropriate administrative requirements for collaborative work across doctoral fields have been put in place, and new interdisciplinary seminars for graduate students to take part in and teach undergraduates about are being developed. Career tracking will become more systematic, with the results informing departmental decisions about graduate training; and students—and faculty—are getting more exposure to careers outside academia.

**Essential Faculty Support Is Growing**

The University of California has a distinctive shared approach to governance. Broadly speaking, the University faculty, frequently acting through the Academic Senate, is responsible for the quality of educational programs that students must complete to earn their degrees and the quality of teaching faculty; the administration is responsible for academic planning and allocating resources. Their common goal is to continuously foster education and research of the highest quality. Therefore, to integrate a broader appreciation of assessment with the campus culture, it is essential that the faculty sees it as a way to significantly improve educational quality.

The WASC accreditation process has catalyzed the thoughtful exchange of information and ideas about assessment at UC Santa Barbara. The process of articulating student learning outcomes and using them to help assess and improve educational effectiveness in the general education, undergraduate, and graduate programs was structured so that participating faculty members could discern what is valuable in this approach. Many of the first faculty members to participate have seen that analyzing evidence of student learning can improve the educational effectiveness of, for example, individual course assignments, a sequence of courses, or the timing of advising students on the knowledge and skills their chosen careers require.

Several examples described in the essays on general education and student learning in the major highlight the approach that UC Santa Barbara’s research-oriented faculty have brought to the cycle of review,
assessment, and change. To take one: At the department level, after assessing data from a lower-division course, the economics faculty discovered that transfer students are more likely to enter with a weak background in mathematics than students who enter UC Santa Barbara as freshmen. Faculty members decided to add a rigorous math review at the beginning of the course. Further assessment bore out the value of this change: students’ understanding of economics concepts improved as their mathematical errors diminished. After finding that a majority of transfer students with introductory economics grades of lower than a B did not qualify later for admission to the major, the department submitted a formal request to the Academic Senate, which is charged with defining admission requirements, to consider modifying the requirements for transfer eligibility into economics.

A Healthy, Sustainable Culture of Assessment Is Taking Root

UC Santa Barbara, faculty, staff, and administrators have convened purposefully over the past few years to analyze and discuss how the campus as a whole can establish, sustain, and give greater emphasis to the practice of using student learning outcomes data to improve educational effectiveness. The participants in these conversations are fully aware that higher education is undergoing profound changes—shaped by new technologies, demographics, and financial realities—and they are mindful of the need to allocate resources to ensure that educational effectiveness is continually improved and the fundamental mission of the University is at all times fulfilled.

To firmly establish a systematic approach to the assessment of student learning and to encourage the faculty’s growing interest, the campus has taken a number of steps, including: (1) establishing the Council on Assessment, a predominantly faculty body, to provide ongoing leadership and expertise; (2) forming the Assessment Research Group to support the Council’s work; and (3) funding an assessment grant program to support innovative, sustainable, faculty-led assessment studies. Faculty from 10 programs on campus responded to the first call for proposals in 2013. A few examples from engineering, social sciences, the humanities, and general education illustrate the degree to which the faculty is thinking deeply about new ways of assessing student learning.

ENGINEERING. The ability to convey technical information clearly and concisely to a variety of audiences is necessary in many careers. In the department of chemical engineering, several faculty members—concerned about their lack of consensus in how to teach these writing skills and about a lack of student proficiency—will collaborate with assessment experts to develop tools and conduct a thorough analysis of the effectiveness of technical writing instruction in lab courses. Data from this assessment will provide a basis for continuous course improvement by identifying and piloting more effective instructional strategies, and the tools can be adapted to improve writing instruction in other courses in the department. To sustain this work, the department has also established a standing departmental committee on assessment.

SOCIAL SCIENCES. Can a department with a high ratio of students to faculty maintain a reliable, valid portfolio-based approach to assessing student attainment of learning outcomes? Two faculty members in the political science department will address this question in a pilot study of using portfolios to assess student attainment of program learning outcomes that reflect some of the most important knowledge, skills, and values identified by department faculty: communication, information literacy, and critical thinking. The goal is to determine whether this approach is feasible and valuable for students, teachers, and administration.
HUMANITIES. After members of the history department identified the ability to conduct historical research as one of their fundamental program learning outcomes, they wanted to find out whether the major adequately cultivated this skill in their students. The entire history faculty will participate in a study of history courses to identify what research-based classes should teach, how well those goals are being achieved, and what changes to the curriculum or assignments might lead to better meeting those goals.

GENERAL EDUCATION. Are adjustments to the writing curriculum needed to improve student proficiency in analyzing the purposes, audiences, and contexts of their writing? A joint effort by the Writing Program and the Department of English to answer this question will define evidence for achieving the learning outcomes, draft and revise assessment instruments, and use them to rate 400 final papers/portfolios. After analysis of the results, teaching practices and/or the curriculum may be revised in 2014–15, and any changes will be further assessed.

Sustaining Momentum
To further develop and sustain assessment innovation and adoption, the Council on Assessment will sponsor regular symposia on assessment for faculty members to share and evaluate their approaches and insights; host a series of campus visits by recognized experts in assessment; disseminate curricular, pedagogical, and scholarly information about assessment in part through a new campus website on assessment [www.assessment.ucsb.edu]; and continue the assessment grant program. The strong role the Academic Senate plays in overseeing academic programs now extends to ensuring that program learning outcomes are approved and, as necessary, revised to reflect changes in academic programs. As new degree programs are proposed, the Senate must approve their program learning outcomes and curriculum. The campus has broadened the scope of faculty-led Academic Program Review to help establish and maintain the cycle of assessment, improvement when needed, and reassessment. Beginning in 2013–14, departments starting a program review will report on the results of assessment and how they have been used. Through their role in the review process, the Graduate and Undergraduate Councils of the Academic Senate will ensure that departments are conducting meaningful assessments of students’ demonstration of the knowledge, skills, and values UC Santa Barbara expects its graduates to possess and are using the results to inform educational effectiveness. External review committees will also evaluate assessments and change, and they are invited to contribute new ideas.

To place greater emphasis on data-based understanding and improvement of educational effectiveness, new positions have been created to provide leadership and expertise. At the graduate level, a new position of associate dean, Graduate Division, has been created with duties specifically focused on graduate program outcomes, assessment, and improvement. The associate dean will be a key part of the campus assessment team, which includes the ALO, faculty assessment liaisons, and staff in the Assessment Research Group, working with academic departments and faculty on assessment. The associate dean will consult with graduate programs as they design, revise, and implement program learning outcomes, and will assist them in interpreting results and making responsive programmatic changes. In addition, two new professional staff positions will provide expertise in assessment methods and techniques and data analysis to the Council on Assessment, academic departments, individual faculty members, and others. Further, the ALO and professional assessment staff have initiated a network of UC colleagues that now holds monthly teleconferences and periodic meetings to facilitate discussions about assessment and educational effectiveness.
In the coming years, the challenges and opportunities for improving the educational effectiveness and articulating the meaning of higher education are enormous. UC Santa Barbara will meet them in a way that is true to its tradition, engaging for its faculty, and powerful for its students.