

U N I V E R S I T Y O F C A L I F O R N I A , M E R C E D

Educational Effectiveness Review Report

for Initial Accreditation



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ESSAY I: INTRODUCTION - A DESCRIPTION OF UC MERCED'S EDUCATIONAL EFFECTIVENESS REVIEW APPROACH

For this report in our application for Initial Accreditation, we continue to take a comprehensive approach, though the report will be organized around a number of questions we have asked. The main report is divided into five essays, which address the required elements outlined in the [WASC Handbook of Accreditation](#) [1]. While the body of the report responds to most of the [WASC Commission](#) [2] and [Visiting Team](#) [3] recommendations from our Capacity and Preparatory Review, we address others in Appendices I through IV, which also include references to relevant portions of the main essays. Appendix V describes our progress on action items we identified in the Conclusion of our [CPR Report](#) [4].

Specific Standards and associated Criteria for Review (CFR) are noted parenthetically at the start of essay or appendix sections in which they are addressed. A comprehensive alignment of CFRs by essay and appendix is provided in Appendix VI. As required, the essays and appendices draw on our data portfolio, which takes the form of exhibits organized by number in PDF portfolios. Some exhibits are available online and can be reached by clicking underlined text in this report (i.e., hyperlinks) when connected to the internet. All exhibits, including those available online, can be accessed in the absence of an internet connection by clicking on the exhibit number that appears in brackets.¹ These hyperlinks take the reader to the targeted document on the thumb drive. In totality, this report, including associated appendices and required exhibits, represents a serious and candid engagement with the accreditation process and reflects our commitment to open and honest communication with the Accrediting Commission (CFR 1.9).

A. Institutional Plan to Assure Quality in Teaching and Learning (CFR 1.1, 1.2, 2.1, 2.4, 2.7, 2.8, 2.9, 2.11, 3.3, 3.8, 3.11, 4.2, 4.4, 4.6)

Our intentional and comprehensive system of quality assurance and improvement is based on alignment of all assessment with [institutional goals](#) [5, 6], on the development in each unit of an assessment plan [7], on annual assessment under the plans, and on periodic review [8] of each unit to collate annual assessment and to re-visit goals and outcomes. While these principles apply to curricular, co-curricular, and administrative units, the system is more robustly developed at the curricular and co-curricular levels. In response to the recommendations of the [CPR Visiting Team](#) [3] and to the [Commission's Action Letter of March 3/03/2010](#) [2], we have continued to develop administrative assessment. This is discussed in Appendix I, Part B.

In the six years we have been educating graduate students and the five years we have been educating undergraduates, our quality assurance practices have shifted dramatically from evaluating what goes into the educational process to considering the results of our educational policies, procedures, and practices. We have also shifted from looking primarily at indirect evidence of educational outcomes to a blend of direct and indirect evidence.

Before opening, we imported the basic groundwork of [quality assurance in the policies of the University of California](#) [3, p.34, Section 3.8] for approving schools, programs, and courses; for funding and administering student affairs programming; for admitting and advancing students; and for hiring and evaluating faculty. UC Merced, as the tenth campus of the University of California, was located in the historically underserved San Joaquin Valley, to increase access to a research university education and to improve educational outcomes of underserved student populations. In addition, the campus was expected to contribute to economic vitality and diversification, as well as provide cultural enrichment opportunities

¹ Except exhibits 145-147, 207, and 373, which are Excel files and must be opened manually from the exhibit portfolio.

to the Valley, which has a population characterized by high levels of poverty and unemployment, a comparatively young populace, and lower levels of educational attainment.²

Schools, operating under [UC Merced Divisional Senate policies](#) [9], provide the fundamental structure for undergraduate educational quality. School faculty propose undergraduate courses, programs, minors, and majors. Each school has a curriculum committee [10] which reviews all curricular proposals. School curriculum committees are delegated the authority to review individual course proposals [11]; if approved, course proposals are forwarded to the Divisional Senate's [Undergraduate Council](#) (UGC) [12] for final approval or rejection. UGC includes as [non-voting members](#) [12] an undergraduate student, the Vice Provost for Undergraduate Education and the Vice Chancellor for Student Affairs. UGC also invites staff attendance from the school deans' offices, advising staff and the Registrar's office. Thus, UGC is able to consider the logistical implications of its decisions. [Programmatic proposals](#) [13] are first reviewed by school curriculum committees, which recommend approval, revision, or rejection, but school faculty as a whole vote. If approved by school faculty, programs go through review by UGC, but because they have larger resource implications, program proposals also are referred to the [Committee on Academic Planning and Resource Allocation](#) (CAPRA) [14] for review and recommendations and ultimately require approval by the Provost.

Undergraduate admissions are managed by the [Office of Admissions](#) [15] under the authority and supervision of the Academic Senate. In effect, this supervision is handled primarily at the UC system level, with the [Board of Admissions and Relations with Schools](#) (BOARS) [16] setting admissions policies and standards under the [California Master Plan for Higher Education](#) [17], although pending changes in [system-wide policies](#) [18] toward having more students qualify for individual review will mean that Merced faculty will have a larger role in two years (See Appendix IV, Part B). Transfer decisions currently involve collaboration between faculty and the Admissions office, with faculty reviewing particular courses for transfer credit in majors and programs.

Graduate Programs are technically not overseen by the schools, but are part of the [Graduate Division](#) [19]. [Course approvals](#) [20] are handled by the UC Merced Division's [Graduate and Research Council](#) (GRC) [21]. [New programs](#) [22] are subject to approval by the system-wide Senate [Coordinating Committee on Graduate Affairs](#) (CCGA) [23], after campus review by CAPRA and the Graduate Dean and approval by the GRC, the EVC/Provost and Chancellor. Practically speaking resource allocation decisions require the input of schools; all faculty are located within schools (a small number of Senate faculty have split appointments), and each Graduate Group has a lead dean, so school structure has a profound impact on what goes into UC Merced's graduate programs, too.

Schools hold FTE³; school faculty and deans are therefore responsible for hiring and for evaluation of faculty teaching, scholarship, and service. Following the system-wide guidelines articulated in the [Academic Personnel Manual](#) [24], [teaching](#) [25, p.3] is regularly reviewed. Again, the emphasis is on [inputs](#) [26, p.26] - on a faculty member's pedagogical approaches, expertise, ability to inspire, etc., though summative evaluation of these abilities does require evidence of outcomes. Still, the primary impact of this shared UC academic infrastructure on educational quality is to provide high-quality inputs.

² Minutes from the UC Regents meetings of 1989, 1990, and May 1995.

³ Full Time Equivalent

B. Indirect and Direct Evidence of Student Learning (CFR 1.2, 2.2, 2.3, 2.4, 2.10, 2.11, 4.4, 4.6, 4.7)

Given UCM's mission to serve the historically underserved, we immediately began to pay attention to outcomes, though our earliest efforts relied on indirect measures of student educational achievement. From the first semester of the first class, we began monitoring student progress with mid-semester grade reports [27], and the Student Affairs Division, in conjunction with the schools, has developed student success interventions of varying intensity in response to student needs. (These actions are documented in Essay IV, particularly part E, as well as in the [Student Success Essay](#) [28] for our Capacity and Preparatory Review.) Moreover, as we have now graduated our first two four-year classes, we are developing longitudinal measures of undergraduate and post-graduate outcomes (see Essay IV).

As our programs mature, we are adding direct measures of educational outcomes. For our Capacity and Preparatory Review, we developed a system of [Faculty Assessment Organizers](#) (FAOs) [29] by program. FAOs guide faculty in developing and implementing multi-year assessment plans that are focused on a set of publicly available Program Learning Outcomes [30]. Plans are based on the idea that both direct and indirect evidence are valuable in assessing student learning but that direct evidence gives a better picture of actual learning. Thus, each plan requires extensive use of direct evidence [31]. Faculty settled on a wide range of plans [32], use a wide variety of kinds of evidence [33], and employ a wide range of methodologies in analyzing evidence. Plans must account for valid and reliable interpretation of evidence [34]. In the past year, plans have been implemented⁴ [35], with faculty in each program assessing at least one learning outcome per program per year. Student Affairs units have developed a similar approach (see Essay II, Parts D-F). Much of the following report evaluates the implementation of these plans.

C. Use of Evidence to Support Further Inquiry and Improvement (CFR 1.2, 1.3, 2.2, 2.3, 2.4, 2.7, 3.4, 3.8, 4.3, 4.4, 4.6, 4.7)

While program-based assessment is highly local and variable, undergraduate programs do not stand alone, nor should an undergraduate student's major be necessarily seen as more important than General Education. We thus asked FAOs for undergraduate programs to map overlaps between programmatic curriculum and [General Education goals](#)⁵ [31, 36, 37]. And in all cases, we asked for a report on alignment with broad institutional goals [31]. Student Affairs, too, is aligning its Divisional outcomes and related programming with these General Education goals [38]. This is a first step in clarifying linkages in support of learning and assessment. That said, programmatic assessment in undergraduate programs is the heart of our assessment effort, as it is closest to each faculty member's main teaching responsibility. It is also the easiest place to "close the loop," [39] as FAOs are in close contact with colleagues, can easily disseminate assessment information, and can monitor the degree to which programmatic and pedagogical changes impact learning outcomes.⁶ Moreover, school support staff and deans' offices are in close enough contact with program faculty to ensure persistent, high quality assessment efforts and to supply appropriate resources both for assessment and for the changes that arise from assessment. We illustrate here [40] this

⁴ Of the 25 undergraduate majors, stand alone minors, and graduate programs with multi-year assessment plans in place when the CPR was submitted, and were therefore positioned to submit an assessment report in time for the EER, 23 (92%) ultimately submitted in time for this report.

⁵ While not required to do so, the FAO for Environmental Systems also mapped graduate program outcomes onto the principles.

⁶ According to George Kuh and Stanley Ikenberry, "program-level assessment data – especially in large, organizationally complex universities – are more likely to be actionable, to get the attention of faculty, and to point to specific improvement needs and opportunities in teaching and learning" ([More Than You Think; Less Than We Need: Learning Outcomes Assessment in American Higher Education](#), NILOA, 2009, p.26.)

basis of our assessment of learning outcomes and how we use the results. This applies to most undergraduate programs, with the exception of General Education, the CORE component of which is assessed the same way with the Vice Provost for Undergraduate Education, who is also the Dean of College One, performing the dean's role. Importantly, this loop is primarily formative, with faculty using inputs from assessment experts, deans, IPA, etc., and using all of this information to improve learning. While there are regular resource implications, we feel that it is important to encourage faculty to be candid in their analyses and thus see a need to keep annual assessment formative in its fundamental nature. Periodic Program Review serves both formative and summative functions. We discuss Program Review in Essay III.

What we did not have in place when we submitted our CPR Report was any systematic way to integrate programmatic assessment so that, say, the library's assessments could inform an undergraduate program's pedagogy beyond extant collaborations, or, say, that how the Student Advising and Learning Center provides tutoring could be informed by FAO reports or vice versa. In short, our system of local assessment did not facilitate the kinds of integration we would need to take full advantage of what we discover about student learning. Nor did we have any established means of ensuring that administrative assessment was aligned with educational goals. Our [Accreditation Steering Committee](#) [41] had been serving these functions *ad hoc*, but [our self-study](#) [4, p.36] for the CPR revealed the need to ensure regular institution-wide assessment. UC Merced has thus established a [Senate Administrative Council on Assessment](#) (SACA) [42], [tasked](#) [43] with the job of integrating assessment data from all parts of the university. Using these data, SACA recommends assessment policies, suggests improvements in practices, and identifies institutional questions to direct future assessment. SACA has identified ways to improve our assessment processes [44], and is beginning to integrate the information coming from all campus divisions. This complement to the primary assessment function is depicted here [45].

Since most⁷ programs have now assessed at least one learning outcome, we are at a transition in our quality assurance efforts. Furthermore, our policies for curricular and co-curricular Program Review were just approved at the time of the CPR site visit and are now being implemented [46], so we have an added procedure for using direct as well as indirect evidence to evaluate our educational effectiveness. In order for us to take the measure of our educational effectiveness, we need first and foremost to see how well we are making this transition toward using direct evidence of educational outcomes.

Our doing so may have broad implications. At the curricular level, we have developed a system of programmatic learning outcomes that anticipated the October 8, 2009 [recommendations](#) [47] of the University of California Undergraduate Educational Effectiveness Task Force (UEETF):

UEETF believes that responsibility for assessing student learning resides with the faculty; should be discipline specific and locally (campus) defined, with Senate oversight and participation; and supported by the required administrative resources and infrastructure for effective implementation.

UEETF, after careful study of assessment and accountability philosophies and practices, presents for the University community consideration of a series of specific recommendations for assessment and accountability. Overall we recommend that each campus have department/program-level undergraduate learning goals, assessments to guide program improvements in undergraduate education, and each campus use the department/program-level

⁷ Of the 25 undergraduate majors, stand alone minors, and graduate programs with multi-year assessment plans in place when the CPR was submitted, and were therefore positioned to submit an assessment report in time for the EER, 23 (92%) ultimately submitted in time for this report.

assessments of student learning to communicate achievement of student learning outcomes to the public. [47, p. 7⁸]

These are new recommendations for assessment and accountability in the UC system, and [system-wide review](#) [48] shows there is much that is both unknown and controversial in the approach. Even though we arrived at this approach independently, we are essentially piloting the recommendations for the system, and our experience will have implications for the entire UC system and, perhaps, for research universities more generally.

Thus, we have organized our inquiry for this review around the following questions [49]:

1) How broadly and successfully are we engaging in assessment across the institution, including the use of assessment results?

- At what stage of assessment is each of our academic and administrative units?
- How well do we do assessment relative to how well we would like to do it?
- What factors limit our ability to do assessment well, including resources?
- Based on the evidence, what do we need to do to improve our ability to meet our assessment goals?

2) What are our assessment efforts revealing about the quality of UC Merced student learning relative to expectations at the program and institutional levels? And, how are the results being used?

3) What do the results of our institutional assessments of assessment and student learning suggest about the types of resources UC Merced needs both to improve our ability to assess student learning and to implement assessment-based recommendations for improving student learning achievement (i.e. to act on what we learn about student learning)?

4) On the basis of this evidence, and looking forward five to seven years, what actions will we take to support improved assessment and student learning?

5) How is UC Merced's approach to assessment and institutional learning changing over time? This final question would contextualize our current inquiries in the larger trajectory of the institution by describing the shift in UC Merced's approach to assessment over time.

In short, are we making assessment a normal part of faculty and staff work?

⁸ PDF, not document, pagination. Unless otherwise indicated, this is true for the remainder of the report.

ESSAY II: ANALYSIS OF EDUCATIONAL EFFECTIVENESS

We have analyzed both our quality assurance processes and what they reveal about student learning outcomes. We organize this discussion under three main questions: (1) How broadly and successfully are we engaging in assessment of student learning? (2) What are our assessment efforts revealing about the quality of UC Merced student learning relative to expectations at the program and institutional levels? (3) How are the results being used? We have engaged this process in academic programs, in the library, and in Student Affairs, yet the breadth and variety of learning outcomes makes it difficult at this point to provide a fully integrated analysis of these three areas, in part because assessment is at different levels in the three areas, in part because, following the [UEETF approach](#) [47], our approach to assessment is very much grass roots. Thus, our discussion below will look at academic programs and Student Affairs programs separately, while also noting points of intersection. And while the library's contributions are integral to student learning, the questions the Visiting Team and Commission asked of us are too expansive to be treated in the body of this report; our discussion of the library's assessment is therefore in Appendix I as part of our response to the Commission's Action Letter of March 3, 2010. Similarly, the bulk of our discussion of outcomes-based assessment of administrative units is in Appendix I. But it is easy to miss the lawn for the roots, and so we use the final two essays of this report to discuss not only how we intend to sustain assessment, but also how we hope to elevate and broaden our perspective. That is, we discuss how we intend to look at the institution as a whole and how we intend to look at integrative General Education for our undergraduate students.

A. How broadly and successfully are we engaging in assessment of student learning in the curriculum? (CFR 1.2, 2.2, 2.3, 2.4, 2.6, 4.3, 4.4, 4.6, 4.7)

We studied two particular aspects of this question: (1) how well are our policies supporting effective assessment? (2) how well are we actually doing assessment? We answer the first of these questions in Essay V, Part A: *Sustaining Assessment*.

To answer the larger and more important question, we asked our Faculty Assessment Organizers (FAOs) for two major reports on their assessment practices: a report on their assessment of one Program Learning Outcome (PLO Report) [50, 35] and a revised assessment plan [51, 52] based on what FAOs learned from that first assessment. We then reviewed these reports independently, using two different committees. The larger committee, constituted mainly of Senate faculty, reviewed the PLO Reports [53]. The smaller committee, constituted mainly of Center for Research on Teaching Excellence Staff [54], reviewed the revised assessment plans. For both review processes, the goals were to generate aggregate evidence of the quality of academic assessment for institutional action as warranted and to provide each individual program with specific feedback to improve assessment practices [55].

While we recognize that assessment is an academic field in its own right and that we therefore cannot expect faculty from across the university to master and apply this expertise in short order, it is imperative that faculty be able to assess the quality of their own assessment using tools developed from the assessment literature. Consequently, our review of the PLO Reports looked as much at the faculty's ability to evaluate the quality of their own assessment as it did at educational outcomes. We did this by first asking faculty to evaluate their own assessments against five criteria elaborated in a rubric [34], locally developed in accordance with the WASC scale (Initial to Highly Developed). As described by this rubric, good assessment depends on identifying outcomes that are pertinent and susceptible of assessment. It can be challenging in many disciplines to find the balance between having students demonstrate the broad knowledge and skills of a discipline and identifying pieces of that disciplinary knowledge that can be measured. The danger of reductionism is as great as the danger of asking questions that are too broad.

Second, faculty must identify appropriate evidence by which to judge learning. Third, faculty must be able to analyze this evidence consistently and accurately by developing, among other things, clear criteria and inter-rater reliability. Fourth, presentation of the data in a usable form is a precondition for using it. Finally, faculty must be candid in drawing conclusions, or else the exercise would be a waste.

We then convened a team of faculty to evaluate the PLO reports in two ways [56]: we asked for discursive comments on strengths and weaknesses, and we used our rubric [34] to provide a summative assessment of these five criteria. The entire committee worked together on a sample report in order to norm our responses. We then distributed the reports so that each was read by two team members. If responses differed by two or more intervals on the scoring rubric, we intended to use a third reader to reconcile the discrepancies, but in no case did we find the discrepancies large enough to require a third reading. We then compiled the findings to enable us systematically to compare a wide variety of types of assessment. Our greatest concern was that program faculty would over-rate their own programs [60], so we began our analysis by comparing committee ratings to program faculty ratings [57].

With one exception, there is no significant discrepancy. The one area in which a substantial *minority* of faculty over-rated their work is in the category of reliable results [57]. This may be because our committee included a social scientist who is an expert in experimental design and interpretation of results; it may also be because reports are drawn from a wide variety of disciplines in which discipline specific evaluation is difficult to evaluate from the outside. Regardless, this is one area in which faculty probably could use expert help, especially in improving sampling techniques and inter-rater reliability.

On the whole, our analyses show that UC Merced's efforts at assessing student learning outcomes can be characterized as leaning toward "Developed" [58]. Most heartening is that we are clearly "Developed" in drawing conclusions and making recommendations, showing that we are responding to what we have learned in assessment (see Section C of this Essay below).

Our analysis reveals significant strengths and weaknesses to the programmatic approach to assessment. On the positive side of the ledger, as articulated in the [UEETF report](#) [47], local assessment means that we apply appropriate standards to disciplinary learning, that we have faculty expertise applied to specific learning outcomes, that faculty can be engaged in meaningful assessment that is embedded in the curriculum, and that faculty ownership of assessment is profoundly encouraged.

What we have learned that was not anticipated in the UEETF report is that the *variety* of measures developed across disciplines and the variety of student work examined [33] provides a wealth of evidence of student learning that is far richer than could be gleaned from standardized testing or other centralized measurement. If we can integrate these data across programs and schools, we'll be able to develop a broad, deep, and highly nuanced picture of student learning. This is important because it will enable us to address two different visions of education that guide our practice. On the one hand, the faculty confirmed, in our strategic [academic planning process](#) [59], their dedication to giving undergraduates a liberal arts education, structured by our [Eight Guiding Principles of General Education](#) [37]. According to this [vision](#) [5, pp. 33-39], faculty intend that each graduate be able to integrate knowledge and skills, whether in solving problems, dealing with inter-cultural complexity, or in appreciating the aesthetic dimensions of life. Faculty expect students to have depth in a major but to understand the weaknesses as well as strengths of specialized knowledge. On the other hand, by putting assessment primarily in the disciplines, we stress disciplinary thinking as higher-order in a linear progression from basic skills and knowledge to specialized skills and knowledge. Indeed, we have no choice but to structure our education this way insofar as we operate under [California's Master Plan for Higher Education](#) [17], in which General Education is foundational (and transferable) and majors build on foundational skills. The tension between these two visions of education must be managed at an institutional level, and our assessment questions,

ultimately arising out of our Senate Administration Council on Assessment (SACA), will need to keep in mind this balance between the general and the specific.

On the negative side of the ledger, the quality of assessment ranges widely, depending on two significant variables that we will be addressing. The first has to do with our size; the second with the availability of assessment support. Regarding size, not one of our degree programs has the economies of scale that would allow us to spread programmatic assessment fairly, broadly, and efficiently. For instance, many of our degree programs have just five [faculty](#) [61]. Our two largest by [student enrollment](#) [62], Biology and Psychology, have 17 and 8 [ladder-rank faculty](#) respectively [61], and neither has administrative support staff specifically dedicated to these equivalents of academic departments. On the other hand, the Merritt Writing Program, the academic program with the largest enrollment,⁹ does have staff support and a fairly traditional structure; it is probably not a coincidence that it has robust and mature assessment practices [64]. Our degree programs, however, do not have departmental structures, which on most UC campuses would provide the leadership and incentives to support programmatic assessment. As we grow, these structures will evolve, and we will have built assessment into the institutional culture, but that evolution will not proceed at uniform rates in all programs. In the School of Social Sciences Humanities and Arts (SSHA) in particular, there is a larger number of majors with [smaller faculties](#) [61] for each. Regarding the availability of assessment support, faculty will need to consult with experts in the field of assessment. SACA has recommended [44] hiring experts by school, and the School of Natural Sciences has already hired a person to fill this role. Given the local variability in assessment approaches, and especially given the complex assessment challenges in the humanities and qualitative social sciences, this expertise will take time to develop and to be applied.

Also on the negative side of the ledger is the danger of letting assessment drive, rather than inform, educational goals. This is, of course, a pervasive concern in assessment at all levels of education, and the devolution of assessment to disciplinary groups is supposed to counter the pressure. It probably does, but the PLO reports show that the pressure remains.

Standardized testing provides the greatest impetus toward distortion. Only one of our programs, Psychology, has used a standardized test for part of its first PLO assessment [33, 35], and so far only one other, Chemistry, plans to [65]. In both cases, programs decided to externalize the cost by turning to an already developed instrument. The Psychology faculty are aware of and are discussing the degree to which using an ETS instrument could lead to unwarranted changes in curriculum. But as long as such testing lowers the opportunity costs of assessment, it remains an attractive option. It remains to be seen if the ultimate cost of using standardized tests is for faculty to lose control over curriculum.

It would be wrong to conclude that Psychology is the only program grappling with the impact measurement has on curricular goals. Many programs are struggling to make rubrics that help faculty assess reliably without reducing assessment to what a rubric can reliably capture [66]. As the PLO report for the Merritt Writing Program [35] acknowledges, “The questionnaire [distributed to faculty] generated language for a rubric draft, but it may have unintentionally drawn attention away from a holistic perspective” that the program usually uses in assessing student writing. All faculty engaged in assessment must be aware of the unique pressures that different assessment techniques bring to bear on defining goals and implementing curriculum and pedagogy to meet those goals.

Finally, the most obvious disadvantage of highly localized assessment is that it discourages individual programs from taking responsibility for learning beyond the disciplines. Correlatively, it militates against measuring the impact of integrative parts of the total curriculum or of co-curricular

⁹ Determined by student credit hours delivered both in writing courses and in CORE 1 courses staffed by Writing Program faculty [63]. The Writing Program offers a minor, but is not a degree-granting program.

learning. The problems of writing and mathematics are particularly salient here. Two generations of research into writing pedagogy show quite powerfully that good writing instruction must balance the universal and the particular. That is, every piece of writing arises out of a discourse community, so that “good” writing depends on the epistemological, evidentiary, and organizational assumptions of the discipline, as well as on any given discipline’s implicit code of conduct. Yet for students to learn to write well in more than one context, they need to learn a “meta-rhetoric” by which they can analyze and adapt to the expectations of any discourse community. Discipline-based assessment has the potential of assessing both, and our current program assessment plans are promising in that most¹⁰ include “communication” as a separate PLO [67]. But writing assessment beyond that taking place in CORE 1, CORE 100, the Literature major, and in the Merritt Writing Program needs development. Again, programs will need expert support if they are successfully to implement their assessment plans, and that expertise will need to cross conventional disciplinary boundaries. The key will be to work not only to assemble evidence from across the campus, but also to integrate that knowledge into sustainable actions.

With mathematics, the assumption that certain mathematical skills can be separated from their contexts is still strong in the pedagogical and disciplinary assumptions of the natural sciences (although the Applied Math Program does not share this assumption and is innovative in its integration of course work in disciplines as part of the major requirements; see the Program Review Self-Study [68] for specifics). Regardless, both mathematics and writing may be confounding variables in our assessment of direct evidence insofar as it is difficult to separate a student’s understanding of disciplinary concepts from his/her ability to demonstrate that performance by using mathematics or effective writing [66]. As the Chemistry PLO report [35] puts it, “In general the faculty found that it was very difficult to evaluate fundamental knowledge based on laboratory or research reports. It was also difficult to avoid evaluating writing ability even when that was not the target of the assessment.”

The problems of integration are equally great with respect to co-curricular functions. The Division of Student Affairs runs a number of programs that directly impact student learning.¹¹ Some of these, like the [peer tutoring](#) [69] and [peer advising program](#) [70], do not require much faculty involvement. Others like the new student [orientation](#) [71] and some [Career Services internships](#) [72, 73], combine co-curricular and faculty guidance for students; [study abroad](#) [74], which is quickly [developing](#) [75], has clear plans to grow faculty involvement [76]. One of our challenges is to develop direct evidence of the impact of such programs and where possible to connect curricular and co-curricular assessment efforts. The Division of Student Affairs is taking the requisite first step of examining the alignment of co-curricular programming with general education goals [38]. In Appendix III, we describe additional mechanisms for better connecting the co-curricular and curricular in support of student learning. We are also developing, in both academic program review and in co-curricular assessment, ways to track those students who have been encouraged, or required, to get extra help so that we can see if the help has had particular and enduring value as measured by particular learning outcomes. In short, we understand and are meeting the challenge.

¹⁰ 22 of 26 (85%) majors and stand alone minors have at least one program learning outcome that explicitly addresses communication as of fall semester 2010.

¹¹ A review of recommendations in PLO reports shows [39] that at least one program will be making more concerted efforts to connect struggling students with tutors.

B. What are our curricular assessment efforts revealing about the quality of UC Merced student learning relative to expectations at the program and institutional levels? (CFR 1.2, 2.2, 2.4, 2.5, 2.6, 4.4, 4.6, 4.7)

While our students do meet UC entrance requirements, a number of other indicators (such as [family income](#) [77, Indicator 18, p.50], [first generation college student status](#) [77, Indicator 13, p.43], [quality of high school](#) [77, Indicators 7-9, p.30-35], etc.) would suggest that our students will face distinctive challenges. Indeed, indirect measurements of student learning reported in the [Student Success Essay](#) [28] of our CPR Report suggest that, compared to other universities with comparable students, our students are retained at higher rates [78], but that in comparison to the UC system as a whole, our retention [78] and graduation rates are lower [79]. Our efforts to measure student learning directly cannot at this point speak to value added, as we will need to establish our own baselines first. But when we directly measure student learning against faculty expectations, we see many of our earlier conclusions corroborated. That is, as reported in many of our PLO reports, faculty are finding fewer students reaching benchmarks than we would hope [80]. As expected, this is in part because many students on entrance do not have the verbal (reading and writing) and mathematical skills required for high-level performance [81]. An analysis of our FAO reports suggests, however, that apparent weaknesses in verbal or computational skills are part of a more difficult problem: our students struggle to manage complex tasks that require integration of skills and knowledge and the transfer of “skills, abilities, theories, or methodologies gained in one situation to new situations.”¹² They struggle to abstract core concepts from data and therefore struggle to use appropriate intellectual tools to solve problems.¹³

Consider, for example, the case of Physics [35], which assessed their first PLO: “Students will be able to apply basic physical principles—including classical mechanics, electricity and magnetism, quantum mechanics, and statistical mechanics—to explain, analyze, and predict a variety of natural phenomena.” As they further explain, “In short, we wanted to know whether our students were learning the basic components of the Physicist’s worldview.” Physics used embedded questions in foundational courses to measure the degree to which students could think as physicists, and they interviewed students to elicit student perceptions of their learning. In the interviews [82], the faculty learned that some students struggled on the Physics GRE in certain subfields, such as thermodynamics, and students felt that they struggled because they had too little exposure to the topic. Such may be partly the case,¹⁴ but the direct measures developed by faculty suggest that the problem may be less a question of coverage than of conceptualization. To quote from the Physics report [35], “Following the attached rubric [33], each solution was rated as Excellent, Acceptable, or Unacceptable. . . . 62% of the solutions were acceptable or better. When restricted to Physics majors/minors, this number improves somewhat to 66%.” Moreover, analyses of student responses to some embedded questions showed the bell curve that a 66% rate predicts, but others showed a curve skewed to the bottom. In explaining the discrepancy, faculty concluded, “[O]ur students have a tendency to be distracted by the abstract and advanced mathematics, missing some of the basic physical principles as a result.” For example, in rating one of two questions chosen from the final exam for PHY 105, spring 2008, the rater concludes, “Problem 1: This was not the best problem to determine ‘physical’ insight, but it did test their ability to interpret the mathematics. In general, very few

¹² AAC&U, “Integrative Learning VALUE Rubric” <http://www.aacu.org/value/rubrics/pdf/integrativelearning.pdf> [281]

¹³ Given the degree to which elementary and secondary education has re-tooled curricula to help students score high on standardized tests rather than to teach students how to confront complexity, we may be discovering a problem with much deeper roots than demographics alone.

¹⁴ Or we could be over-generalizing from a small sample. Very few students participated in the summer focus group; these are the best and most engaged physics majors, who may just be coming to understand the magnitude of their undertaking. Not all were cowed; one of these students noted that he had an epiphany when he realized he could solve problems that graduate students were tackling.

students correctly understood how to solve an ODE¹⁵ given an ansatz and to carry this through to completion. It appeared that many of the students simply wrote down the answer from memory (for which I still rated as acceptable, A).” In looking at PHYS 105, spring 2009, the raters conclude, “In summary we feel that students need to achieve a balance or stronger link between the ‘derivation’ and the ‘concept’. The derivation is critical, but one must not lose track of the conceptual understanding and development of intuition about how things behave.”

Consider, for a second example, Anthropology [35], the faculty of which intend to help students use multiple intellectual tools to manage complexity:

The Anthropology Program at UC Merced emphasizes and integrates the three primary sub-fields of anthropology: archaeological anthropology, biological anthropology and socio-cultural anthropology. . . . The learning goals for students in the major are:

- Develop an issues-based approach to anthropological knowledge and practice that emphasizes common topics shared by multiple sub-fields;
- Cultivate an understanding of human cultural and biological similarity and difference across time and space; and
- Develop skills to effectively collect, analyze, synthesize, and present anthropological data.

Students majoring in anthropology develop a holistic view of the complexities of human societies past and present and around the world. Students conduct anthropological research, critically analyze anthropological scholarship, and demonstrate the ability to communicate anthropological knowledge in different mediums to a range of audiences. Finally, as students majoring in anthropology understand the social worlds of others, they demonstrate that they better understand their own world, including their place in an increasingly globalizing world.

Like the Physics program, Anthropology used rubrics [33] to assess student work on a three point scale, though with the bias toward success, as the bottom level is “Adequate,” followed by “Proficient” and demonstrating “Mastery.” Assessment results show that students for the most part reached the lowest acceptable level of performance [83].

Anthropology faculty recognize that the assessment reveals weaknesses in the assessment instrument and that therefore one should not over-read the results. Faculty identify two particular problems. First, a three point rubric [33] compresses too much performance range in the bottom category and does not allow raters to identify strong performance without going to the extremely high benchmark of “Mastery.” Second, and more importantly, the rubrics, by articulating everything that *must* be in a response in order for it to reach a certain level, prevent readers from responding holistically to the topics and approaches the students themselves chose (see Part A of this Essay above, for a discussion of problems in applying rubrics). Given that Anthropology sets holistic interpretation as a programmatic goal, assessment should privilege holism, and the faculty thus conclude that students may actually be performing at a higher level than the rubric reveals. Still, the faculty admit to being “disappointed” in what students are demonstrating. And it seems likely that the performance disappoints precisely because the task requires such high level integration, asking students to respond to disciplinary traditions, theories, and interdisciplinary intersections in order to argue how to interpret particular information.

Consider, as a third example, Environmental Engineering [35], which is one of our programs that will soon be seeking concurrent WASC/ABET accreditation [84]. Thus, it has a clear set of nationally identified and normed expectations. We choose this program also because the PLO the Environmental

¹⁵ Ordinary Differential Equation

Engineering faculty assessed, “Critical Thinking,” aligns with “[Decision Making](#),” [37] an educational goal identified by the entire university faculty as a core learning outcome for all undergraduates. As the Environmental Engineering faculty defines it:

EnvE graduates will be adept at applying critical thinking, problem solving, engineering principles and reasoning, the scientific method, and teamwork to solve environmental resource problems and to restore and sustain the global environment.

The Committee selected PLO 2 because (1) it is a good general indicator of the success of the EnvE program, (2) this PLO encompasses several of the fundamental ABET criteria, and (3) Students in the upper division EnvE classes assessed have completed their lower division General Education, basic sciences, and math requirements, and a significant portion of their engineering fundamentals courses. It is the intent of the core courses to build on this foundation to develop and exercise students’ critical thinking in the context of modern environmental problem solving and project work.

On analyzing the assignments for alignment with sub-parts of the outcome, the FAO dropped “teamwork” from his assessment, as not enough assignments provided adequate evidence.¹⁶

Again, we see faculty looking for a high level of integration, but as the engineering program focuses on concrete problems and has clear benchmarks for programmatic success, one could anticipate higher accomplishment. The Environmental Engineering Program’s assessment was based exclusively on direct evidence, but rather than rating the evidence, it rated the grading of evidence [33] and then used student grades as indicators of student success. By the program’s “success criterion of 70% or better for these assignments,” the analysis shows two-thirds of the assignments revealing successful outcomes [85].

The program’s assessment report [35] acknowledges that this mode of assessment does not give very fine gradations of information about student accomplishment. But because courses are built around ABET- established [learning outcomes](#) [86], the approach does seem to give a strong general picture of success, certainly strong enough to enable faculty to address weaknesses and play to strengths. In general, the 66% of questions revealing successful attainment of the PLO is slightly below the 70% target success rate [85]. Once again, we see students not completely reaching the level of abstract integration we would desire, though it does appear that the more concrete, task orientation of the program enables more students more of the time to develop the skills and understanding necessary to achieve high-level integration.

Consider as a final example, the minor in Spanish [35], which shows a very high level of performance against a nationally normed benchmark. Faculty in the Spanish program “pursued the question of whether by the completion of their minor in Spanish students possessed Spanish writing skills equivalent to the advanced level of the ACTFL Proficiency Guidelines.” Working in a field with a long tradition of assessment and having applied the insights generated by this tradition from the beginning in 2006, the Spanish minor faculty were able to evaluate with a high degree of reliability the writing abilities of its advanced students [87].

Lest one assume that these students had excellent skills in writing in Spanish on entry to the university, it is worth noting that a high percentage of UC Merced’s “heritage” speakers of Spanish had not spent significant time studying written Spanish prior to entry into the university. Moreover, the program also used indirect measures to assess student understanding of what they had *gained*. Thus, it seems that

¹⁶ One result of the assessment is that Environmental Engineering faculty are reviewing their curriculum to see if they need to add more assignments that develop teamwork skills [80].

not only has the Spanish language program reached absolute levels of quality, it also has added measurable value.

In contrast to the other programs discussed here, the Spanish minor has the most disciplinarily circumscribed [learning outcomes](#) [88]. Four of the five areas assessed have to do with writing mechanics [33]; the fifth—“Content”—does not specify any particular subject content. Indeed, an analysis of the rubric [33] shows that “Content” in fact refers to how well a writer anticipates audience expectations for coherence and charisma. Appropriately, given that this is a foreign language minor, nothing here rises to the level of complexity expected in PLOs assessed by Physics or Anthropology.

We have not yet developed enough data to make major recommendations, but, on the basis of these preliminary findings, we may wish specifically to mine upcoming PLO reports for further evidence. In particular, the Applied Math Program has designed an innovative curriculum specifically to address the kinds of integrative problem solving highlighted here [68]. Further assessment of Applied Math’s learning outcomes correlated with assessment of some of the programs Applied Math supports, such as Physics and Computer Science, may give us some guidance. Crucial, here, is the kind of across-the-institution analysis that SACA will be directing in the coming years. SACA may also wish to do some supplemental research to find appropriate responses. For instance, we know that many of our students engage in significant undergraduate research experiences, and some studies show that such experiences yield significant learning gains.¹⁷ We may wish to study how undergraduate research helps students to manage complexity.

C. How are the results of curricular assessment being used? (CFR 2.2, 2.4, 2.5, 2.6, 4.3, 4.4, 4.6, 4.7)

We are “closing the loop” simultaneously in two major ways: we are revising our approaches to programmatic assessment [39, 52], while also developing ways to integrate programmatic assessment across the institution, and we are making changes in programs in order to improve student learning [39]. We also recognize the need to improve how we use information derived from assessment to inform budgetary decisions, so we are also presenting in Appendix IV the results of our investigation of how we develop the instructional budget.

Improving assessment: For many programs, the first improvement in the assessment plan came when they translated their plans into actions. Specifically, many found that they needed to drop parts of the assessment or shift to a different PLO because the evidence they had collected was not adequate, or that they needed to change which courses they would target for data collection [89]. Beyond such *ad hoc* changes, the first systematic improvement came after the first full assessment cycle, when we asked FAOs to identify changes to their assessment practices.

The range of actions is broad [39], showing very much that local control of assessment means that faculty are necessarily taking discipline-specific actions as they learn how to assess the learning outcomes

¹⁷ See, for instance, Ishiyama, J., “Participation in Undergraduate Research and the Development of Political Science Students,” *Annual Meeting of the American Political Science Association*, Boston, MA, 2002, or Ryder, J., J. Leach, and R. Driver, “Undergraduate Science Students’ Images of Science,” *Journal of Research in Science Teaching*, Vol. 36, 1999, pp. 201, which document cognitive gains from undergraduate research. Hunter, A.-B., S.L. Laursen, and E. Seymour, in “Becoming a scientist: The role of undergraduate research in students’ cognitive, personal and professional development,” *Science Education* 91 (2007): 36-74, concur, but their argument suggests that UCM faculty may have unrealistically high expectations for the development of higher-order thinking at the undergraduate level. Looking at the impact of undergraduate research from the perspective of student engagement, George Kuh lists it as one of the highest impact educational practices (*High-Impact Educational Practices*, Washington, D.C., AAC&U, 2008)

of students in their own programs. Over a quarter of programs are revising rubrics, which is important given what we have learned about the value of having good rubrics if we are to have assessment improve learning rather than distort educational objectives.

The most common objective—to streamline assessment—speaks to the high opportunity cost of assessment in these early stages. While, to a large extent, streamlining will come with practice, it is certainly true that we need to learn how better to embed assessment into our fundamental educational approaches while figuring out how to collect evidence from authentic student work in usable forms. This is not an easy challenge, as authentic work is usually complex and simultaneously asks students to demonstrate achievement of multiple learning objectives. Thus, abstracting from such assignments what is specific to a particular assessment requires great attention to the assessment instrument. Perhaps the only way to streamline such a complex challenge is to develop expertise. The SACA plan for sustainability addresses this need (see Essay V, Part A). Regardless, there is close alignment between this frequently addressed plan and two others [39]: to increase faculty involvement and to develop new forms of evidence. One thing perhaps missing with respect to increasing faculty involvement is the question of graduate student involvement. Given that a research university includes among its tasks the preparation of the professoriate of the future, we have begun using a [FIPSE grant](#) [90] to offer graduate students research appointments to conduct classroom assessment of how well we are meeting the needs of first-generation college students. These findings are being [published](#) [91]. Involving graduate students in program level assessment and planning might become another one of our goals. At the same time, it is important that we do not see this as a matter of moving the work down the ladder; we both need to develop assessment expertise within our faculty and to teach that expertise as one part of the necessary skill set for the faculty of the twenty first-century.

Improving Student Learning: As we see a range of approaches to improving assessment, so we see a range of approaches to improving student learning [39, Tables B and C]. One concern voiced in almost every assessment report is that, so early in assessment, we have neither the high degree of reliability nor the longitudinal evidence to justify making wholesale changes in curriculum or pedagogy; nonetheless, we see that faculty have adopted a fairly large number of significant changes [39]. Obvious needs—including those that faculty discover on the basis of classroom experience, rather than on the basis of programmatic assessment—are being addressed now, as they have been from before we did our first systematic PLO assessment. As we move beyond the easily identifiable changes, we will have refined our techniques and so will better know what we need to change and what changes will be most beneficial.

A review of PLO reports [35, 39] shows that while there is a variety of approaches to improving educational effectiveness, most programs are responding to the weaknesses identified above, namely, that many students lack fundamental skills and that even more students struggle with abstract or integrative thinking. Changes in required courses, with emphasis on prerequisites and co-requisites, mostly address the problem of skills, as do suggestions for improving the use of co-curricular support [39]. The many programs intending to introduce skills earlier in the curriculum are addressing the concerns about scaffolding and sequencing, hoping more intentionally to develop higher order integrative skills through a progressive and recursive sequence of concepts and practice. And the many programs intending to “integrate skills or knowledge more completely through program curriculum,” are intentionally focusing curricular matters on integration rather than assuming that integration happens as a matter of course.

For example, History discovered [35] “that students had the greatest difficulty, in general, in critically synthesizing primary and secondary sources, while they were best at critically reading secondary sources.” Despite reservations the faculty have about the utility of their rubric [33], “[t]he results may be considered valid in that they confirm what the faculty in the program suspected about student abilities, based on classroom experience.” Changes the faculty are adopting range from revising the senior capstone

course to give more structure and guidance for seniors writing their theses, to restructuring the mid-level historiography course, focusing on use of primary materials, to asking faculty explicitly to “emphasiz[e] the development of skills in research and analysis” in all upper-division courses. In short, the faculty are refocusing the second half of the curriculum to stress the analytic skills needed for students successfully to integrate all aspects of the historian’s craft into high-level critical thinking.

For another example, the biology program [35] also found that students were not reaching targets in high-level, synthetic thinking. Program faculty reached this conclusion after evaluating the program’s first PLO, “Graduates from the Biological Sciences programs will have demonstrated an understanding of the tenets of modern biology and an understanding of how cellular functions are integrated from the molecular level to the cellular level, through to the level of organism, populations, and functioning ecosystems,” intending “to determine if our students were indeed seeing beyond the level of a particular class (molecular, cellular) into the ‘big picture’ of Biology.” In deciding how to improve student performance, the biology faculty are considering changes in curriculum at both beginning and advanced levels. Specifically, they are recommending [35, 92] changes in co-and prerequisites for the BIO 1-2 introductory sequence, changes in content in the BIO 1-2 sequence, and are asking “all faculty [to] participate in a discussion of how each of their courses could promote this type of knowledge.” Moreover, the report asks biology faculty to adopt more active-learning techniques in their pedagogy, with particular emphasis on ensuring that students put the pieces together.

For a final example, the political science faculty, too, in addressing a very broad learning outcome, found that students did not demonstrate the desired clarity in distinguishing between “facts, theories, and systematic data.” The report [35] did show that students were competent or excellent in handling other aspects of the PLO, to demonstrate that they “understand the processes, theories, and empirical regularities of political institutions and political behavior.” In particular, students were quite able to describe and analyze political processes. It was in the move from concrete examples of processes—textbook examples, if you will—to more abstract theoretical analyses that students were pressed. “To address this issue, the committee will propose to the political science faculty that they should [decide] whether 1) Theoretical Models of Politics should be offered relatively regularly (it has yet to be offered) or 2) Theoretical Models of Politics should become a required course for all political science majors. This class should help students gain a better understanding of the nature and role of theory in political science.”

D. How broadly and successfully are we engaging in assessment of student learning in the co-curriculum? (CFR 1.2, 2.11, 2.13, 3.4, 4.4, 4.6)

The Division of Student Affairs has been engaged in on-going, albeit informal, assessment since its beginning [93]. In the early years, Student Affairs staff would begin with policies or practices from their prior experience on other campuses, including many of our sister UC campuses. As we came to better understand the needs of the UC Merced students, we adjusted our offerings and services. The summer orientation program is a stellar example of how we improved a program through these early assessment practices. In response to feedback from students [94], families [95], and campus colleagues [96], the program became more personal, evolving from a parade of speakers in an auditorium of 200 students [97], to small group presentations involving 50 students [98] working with an orientation leader trained to facilitate discussion and answer questions [99]. As a result, orientation now better models our campus commitment to student-centeredness. Transfer student orientation was also revised. In response to concern that transfer students were unprepared for a research university, the program shifted from registering students for classes [100] to educating students about the expectations of a UC before they select their courses [101]. These changes were made in response to experience, not through rigorous, systematic assessment. By 2009, we knew that the institution was growing too quickly to continue

operating without a more systematic approach to assessment and so, as described below, we began to implement one.

In August, 2009, the Division of Student Affairs Vice Chancellor Jane Lawrence began introducing formal assessment to her staff. She crafted a template to aid the 18 student affairs units [102] in their first round of annual assessment planning. The template [103] provided a structure for unit directors to identify the department's mission, to list three or four annual goals for the department and then to indicate a program objective (PO) or a student learning outcome (SLO) for each goal. The template also asked staff to indicate the method of measurement that would be used to assess these goals, POs and SLOs. The results and conclusions would be completed at the end of the academic year and included in each department annual report in June 2010.

The unit directors submitted assessment plans [104]¹⁸ to their Associate or Assistant Vice Chancellor (AVC) in September 2009. As the AVCs reviewed the plans, it became clear that the Division would need additional resources to support the units in their assessment endeavors. While each unit head completed the template, most staff were new to systematic assessment and the Division did not have any staff member with expertise in assessment to assist them. Specifically, even though measures were proposed, many units did not have the knowledge or resources to collect or analyze the data they needed to evaluate their programs, let alone assess student learning.

In March 2010, the Student Affairs Division hired a part-time (40%) position of Coordinator of Assessment, Evaluation and Research. The first assignment of the new Assessment Coordinator was to review the assessment plans with each of the unit heads. These interviews were conducted during the second half of March. The Coordinator provided feedback to the unit heads, but the assessment plans were not edited. Instead, the focus of the interview was to provide strategies for collecting data, documenting the results for the 2009-10 plan and offer coaching for the 2010-11 annual assessment planning process. From these initial interviews, it was clear that like the FAOs many of the Student Affairs staff were challenged by the assessment process and had unrealistic expectations of what could be accomplished in year one. The Division would need to continue to provide resources, professional development and coaching to help the Division achieve its goal of comprehensive, Division-wide best practice assessment.

To complement this interview process and to more formally establish baseline data on the quality of assessment planning within the Division, the Assessment Coordinator used the locally developed *Rubric for Assessing the Quality of Student Learning Outcomes and Program Objectives in Student Affairs* [105] to score the 2009-10 departmental assessment plans. In June, the completed assessment plans [104] were submitted and the Assessment Coordinator scored the remaining portion of the documents using the *Rubric for Assessing the Quality of Results and Reporting in Student Affairs* [106]. Confirming impressions from the interviews, the majority of the Student Affairs plans were judged to be at the "Initial" stage of development regarding assessment planning [107]. About one-third of Student Affairs units were beyond the initial phase with respect to the Alignment & Rationale criterion, whereas planning was least developed with respect to the Measures criterion. The level of development for the Assessable Program Objectives and Student Learning Outcomes criteria fell in between [107]. The units scored better on the second half of the plans, with a solid third of the Division scoring above "Initial" for Reliable Results, Results Summary, and Conclusions criteria [108]. There appeared to be a strong relationship between a unit's Results score and its access to established data sets that addressed the unit's specific assessment question. Whereas some units had to gather required data themselves, the Office of the Registrar [104], for example,

¹⁸ This exhibit provides the completed assessment projects, which include the original assessment plans; as per the template [103], assessment planning involved completing the mission, goals, objectives, outcomes and measures sections by September 2009.

was able to use data from the student information system to explore possible reasons that students who are expected to graduate do not in fact complete their UC Merced degrees as planned.

To examine the impact of the assessment support and related professional development provided to Student Affairs staff this last year, the assessment plans for 2010-11 were evaluated using the *Rubric for Assessing the Quality of Student Learning Outcomes and Program Objectives in Student Affairs* [105]. The Division has shown impressive improvement [109]. Seventeen plans [110] were submitted¹⁹ and scored by the Division's assessment coordinator. In this second iteration of the formal assessment planning process, the plans scored higher on every criterion of the rubric. In Alignment and Rationale, 18% scored "Emerging" and 82% scored "Developed." In Assessable Program Objectives, 24% scored "Emerging" and 76% scored "Developed." In Assessable Student Learning Outcomes, 18% scored "Initial," 47% scored "Emerging" and 41% scored "Developed." Finally, in Assessment Measures, 18% scored "Initial," 29% scored "Emerging" and 53% scored "Developed" [109].

As these two analyses demonstrate, the Division's comfort with and knowledge of assessment has changed dramatically from year one to year two as we have added staff, resources, structure and training. In addition, the revised template [111] has assisted staff to better focus their assessment initiatives. For the academic year 2010-11, all units will also self-score their plans using the two rubrics [105,106]. This will give the unit heads a clearer sense of where they can improve their plans and allow for more than just the Assessment Coordinator to utilize the rubrics to score the Division's plans.

E. What are our assessment efforts revealing about the quality of UC Merced co-curricular learning relative to expectations at the program and institutional levels? (CFR 2.II, 2.13, 4.4, 4.6)

With most Student Affairs units' first year assessment efforts at initial levels in 2009-2010 [108], it is not possible to draw large-scale conclusions from the data [104]. Moreover, many of Student Affairs goals are preliminary or foundational to student learning, and while measurable, have an indirect relationship to student learning. For instance, the Student Advising and Learning Center must get students to access its services so that it can affect student learning. This past year, one of its most easily measurable goals was the degree to which it reaches students who need academic support [104]. Thus, much of the current Student Affairs material, while directly measuring important performance indicators, does not yet directly measure student learning.

A review of Student Affairs assessment reports [104] shows that, in the first year of systematic assessment endeavors, many units gravitated toward straightforward, quantitative tracking strategies [112]. It is a natural first step to determine if students are aware of the nature, extent of, and location of the services, and to measure how effective units have been in communicating to students regarding the breadth and depth of programs and services available to support their academic and personal success. This is a fundamental learning outcome; students must use these mostly voluntary services for them to have measurable outcomes. In many cases, surveys of student awareness are appropriate direct evidence; in other cases, such as in the Housing Office, tracking maintenance requests, student awareness of their responsibility for maintaining a safe, healthy, and attractive community, is measurable by their actions [104]. In these kinds of foundational learning outcomes, Student Affairs units show good to excellent success.

Clearly, the next steps, which we are already taking in many of our year-two assessments, is to determine if the services we are providing are the types of support students need to be successful and if the Division of Student Affairs is achieving its higher-level student learning outcomes, such as developing

¹⁹ The [Center for Educational Partnerships](#) plan was deferred.

civic responsibility and increasing leadership capacity. Student Affairs has developed a matrix [38] that shows how the Division's learning outcomes [113] align with the [Guiding Principles of General Education](#) [37] and a list of programs, services and activities that we offer that support both the learning outcome and the guiding principle. Student Affairs looks forward to working with the faculty and SACA to integrate the co-curricular assessment into the assessment of General Education.

F. How are Student Affairs units using the results? (CFR 2.11, 3.4, 4.3, 4.4, 4.6)

Almost half of the Student Affairs units' program assessment conclusions (8 of 18, or 44%) for the 2009-2010 academic year yielded reliable and meaningful findings. These units were able to employ the findings from the 2009-10 assessment activities to plan improvements to their programs or services in a tangible way for the 2010-11 academic year [114].

The remaining ten units within the Division of Student Affairs whose assessments activities in 2009-10 did not yield results that could inform practice as of yet have all made significant improvements to their 2010-11 assessment plans [109]. While they are not able to "close the loop" at this point, their 2010-11 assessment plans contain more realistic and measurable targets [110] and we anticipate the remainder of the Division will be able to apply their assessment findings to programming and services improvements in the next year.

With assessment in 2009-2010 at an initial level, most energy has been directed at improving assessment itself. Once the Coordinator reviewed all the plans using the rubric [105] and completed the interviews with all the department heads, she met with each Assistant and Associate Vice Chancellor (AVC) separately to discuss the state of assessment. Then, the Vice Chancellor and AVCs included assessment as a topic of discussion and included the Coordinator in their meeting. Several key decisions regarding the Divisional assessment activities emerged from that discussion: the original assessment plan template was updated [111], the Student Affairs leadership retreat schedule [115] was altered to address assessment, the rubrics were introduced to the department heads, and the 2010-11 assessment schedule was finalized [116].

The discussion of assessment led to recommended improvements to the assessment plan template. The second version of the template [111] was used for the 2010-11 Student Affairs leadership retreat, where assessment planning was discussed and practiced. Notable changes included the clearer alignment of the goals, student learning outcomes (SLOs) and program objectives (POs) on the assessment template. The relationship between the goals and the POs and SLOs caused confusion in the 2009-10 planning process and the new template encourages staff to align their student learning outcomes and program objectives directly with their goals. The Vice Chancellor's leadership team also decided to move the above-mentioned summer retreat from July to May and include strategic planning and assessment as major topics to be addressed [115]. Additional staff were included in the May retreat to ensure that all units completing assessment plans were represented and received the information about assessment. This provided the Student Affairs units with more information and a clearer understanding of how best to complete the 2009-10 assessment plans for their upcoming annual reports, and also allowed them the entire summer to work with their teams on the 2010-11 assessment plan. The earlier date for the retreat also meant that the Assessment Coordinator could provide coaching and training over the summer to support the units in their second round of assessment planning. During the retreat, more education was provided about general assessment practices as well. The staff practiced crafting effective program objectives and student learning outcomes, which helped clarify the difference between the two – which was one of the recurrent problems in the 2009-10 assessment plans.

Another suggestion for improvement emerged from the assessment discussion with the Vice Chancellor and the AVCs. The leadership realized that the units' annual assessment plans were not connected to the overarching Division strategic plan. Thus, at the two-day May Leadership Retreat, the 2007-2012 Student Affairs Strategic Plan [117] was reviewed and updated [118]. This set the stage to link the 2010-11 unit assessment plans to the Division's strategic plan. In turn, the 2010-11 assessment planning process included the challenge to use at least two of the four goals from the 2007-12 Student Affairs Strategic Plan [111]. The Division's strategic plan was developed in 2007, thus it made sense to review the document at the retreat in May since it is about halfway toward completion.

Finally, the rubrics [105, 106] were introduced at the retreat. The staff participated in an activity where small groups used these tools to score actual 2009-10 assessment plans submitted by the Dining Services and Health Promotion units. This created constructive group discussion and also prepared units to use the rubrics in 2010-11 to self-score their departmental assessment plans. Most of the Student Affairs staff were not familiar with using a rubric as a tool for assessment, so this practice was another commitment to the future assessment education of the Division.

At the conclusion of the retreat, everyone received a schedule [116] with key assessment dates. In June, the assessment plans - complete with results and conclusions - were attached to their annual reports to the AVCs and Vice Chancellor. All staff were notified that the 2010-11 assessment plans would be due August 13, 2010 to the Assessment Coordinator. Following the retreat, the Assessment Coordinator met with units separately to assist them with their 2010-11 assessment plans, which were received, and as discussed in Part D of this Essay, showed a significant growth in understanding of the assessment process.

G. How do results affect educational and co-curricular budgets? (CFR 3.8, 4.3, 4.4, 4.6)

Until now, and as described in Appendix IV, Part B, instructional and co-curricular budgets were established in part on the basis of best practices and/or direct evidence of student demand, not on the basis of student learning outcomes. The campus has a long enough history now to have the ability to predict course demand and to match that to course offerings, rooms, and labs. Many of UCM's dedicated income streams are predicated on enrollment, leading to fairly direct relationships between enrollment and number of support staff, such as academic advisors. Budgeting for academic support services provided by Student Affairs has been more qualitatively assessed, with the Provost and the Vice Chancellor of Student Affairs collaborating to make such budget requests. While such decisions are made prospectively on the basis of past use and anticipated student needs, the money allocated for such services as tutoring has been validated *post hoc* by how well such services are used.

Already academic assessment results have made their way into the budgeting process to some degree. Of the assessment-derived priorities identified by the Dean of Natural Sciences in March 2010 [119], a request to support a new course in Chemistry has been implemented, and this year Physics is advertising for a Lecturer with Potential Security of Employment (LPSOE) [120]. Since annual academic budget requests come from the three schools and since schools seek faculty approval of annual plans, faculty can easily incorporate direct evidence of student learning into their budget requests. Moreover, the summative mechanism of program review will also provide a channel for moving direct evidence of student learning into budget decisions. The policies and procedures are in place; we will need several years of data before we will be able to evaluate what impact assessment of student learning has on educational and co-curricular budgeting.

ESSAY III: ANALYSIS OF PROGRAM REVIEW (CFR 1.2, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.10, 2.11, 2.12, 2.13, 3.1, 3.2, 3.8, 3.11, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7)

In September 2009, the Academic Senate of UC Merced adopted a Program Review policy for both graduate [121] and undergraduate programs [122]. In February 2009, the Vice Chancellor for Student Affairs instituted a Program Review policy [123] for the 18 departments that report to her [102]. Thus, all academic and Student Affairs programs undergo regular program review.²⁰ Graduate [124] and undergraduate reviews [125] will take place on a seven year cycle. Already established undergraduate programs will be reviewed according to a [schedule](#) [125] developed in AY 2009-2010, with any subsequent new majors being scheduled for their first review seven years after the first students enroll. Graduate programs will be reviewed seven years after approval by the UC [Coordinating Committee on Graduate Affairs](#) (CCGA) [23].^{21,22} Co-curricular programs also are on a seven year cycle [126].

A. Academic Program Review

Academic Program Review policies, both undergraduate and graduate, were designed to meet both UC and WASC standards for evaluating the quality of academic programs. While UCM's policies are based substantially on policies long used at other UCs [127], the Merced Division of the UC Academic Senate explicitly included new procedures and requirements to meet WASC expectations for integrating student learning into program review [128]. The undergraduate review policy, adopted on a one year trial basis so that it could be refined on the basis of our experience [129], has been revised and approved. Since one of our goals is more fully to integrate curricular and co-curricular learning, program review of Student Affairs units follows, as much as possible, a parallel structure to that of Academic program review.

During AY 2009-10, the Program Review Subcommittee of the Undergraduate Council undertook a review of the [Applied Mathematics Sciences](#) (AMS) [130] program. The program's self-study reveals a highly developed approach to improving student learning [68]. The [AMS faculty](#) [131], who teach many [courses that serve other programs](#) [132], have a highly developed culture of assessment, and had integrated assessment into planning even before [Program Learning Outcomes](#) [133] were developed and formal annual assessments of all programs were instituted [68]. After every semester, the faculty met and analyzed course data [134]. Even before program review, AMS had restructured the placement tests, restructured MATH 5 (Pre-Calculus), adopted a new calculus textbook, reorganized the calculus sequence, and reorganized the core courses for the Applied Math major [68].

The Program Review Report [135] affirmed the way the AMS faculty focused on student learning and continuous improvement. The ways in which the AMS faculty embedded assessment in their culture enabled the Program Review Committee to understand the effectiveness of the program and the ways it used assessment for ongoing development. Having conducted only one program review,²³ we cannot speak widely to what programs have learned through the process; because of the culture of assessment that AMS had already developed, program review may have had a less dramatic impact on program development than might be expected. However, the faculty leader of AMS reports [136] that the faculty have gained a greater understanding of the overall effectiveness of their program. In particular, the AMS

²⁰ Periodic Review of non-Student Affairs Administrative units is discussed in Essay V, Part A, Appendix I, Part B and Appendix II, Part B.

²¹ Currently, UC Merced has two CCGA approved graduate programs, Environmental Systems and the Individual Graduate Program. The latter, which was conceived as an incubator for the formation of independent graduate programs, [supports eight graduate emphasis areas](#) [317]. As of fall 2010, three programs, Cognitive and Information Sciences, Psychological Sciences, and Quantitative and Systems Biology, have emerged from this incubation process and are undergoing CCGA and WASC review.

²² Current emphasis areas will, if not on schedule for CCGA review, be scheduled for review as well [124].

²³ In keeping with the Program Review [schedule](#) [125] four are underway this academic year.

faculty have been able to gain a deeper appreciation for their organization, program objectives and current progress. Consequently, they have gained confidence in their ideas and abilities to carry out their plans for the program. Moreover, through the preparation of their self-evaluation, the AMS faculty have learned what program data is useful to collect and how best to organize it.

While any assessment of the impact of program review on the effectiveness of AMS is necessarily preliminary, faculty expect the program review to shape how they plan its future. The Program Review Committee (PRC) members' suggestions during the site visit and their report [135] provide several comments that the AMS plans to address in the near future. For example, the report states that "The AMS Undergraduate Program needs a greater diversity of its core course offerings;" the faculty is already exploring new courses to develop and launch. To support this, over the coming academic year, the AMS faculty will make revisions to its strategic plan to facilitate the broadening of course offerings. The PRC report also addresses the overall balance of administrative workload to teaching and research duties [135]. Empowered by the PRC report, the AMS faculty will begin to work with the Dean of Natural Sciences to develop a more organized plan to address and meet the administrative needs for this program in a way that balances reasonably with their scholarly duties in teaching and research.

Because the Academic Senate has not yet taken program review through the whole cycle of response, we cannot be definitive about the impact program review will have on resources and organization.²⁴ In accordance with policy [122], in September 2010 the Program Review Report was officially forwarded to the AMS program, the Dean of the School of Natural Sciences, the Vice Provost for Undergraduate Education (VPUE), and the Executive Vice Chancellor (EVC) for response [137]. UGC received responses from the program [138], dean [139], the VPUE [140], and EVC [141], and asked for clarification from the program [142]. We expect that the program review process will aid the administration in making decisions about the distribution of both responsibilities and resources more generally. On the basis of the Program Review site visit, AMS has already begun to revise its strategic plan. Resource requests that arise from the first program review will appear in the budget requests and strategic plans due February 1, 2011 [143], and final allocations of resources by the EVC will be made in summer 2011.

Our initial experience of Program Review has been largely positive. The one concern we have is the time and labor involved in the process; the process required significant work from the program, school, Institutional Planning and Analysis, and Senate. Developing the self-study took a considerable amount of time, even though AMS had long been deeply engaged in assessment of student learning. The lead AMS faculty member estimates that the process of assessment and review reduced his research productivity by a factor of two.²⁵ A school staff member and [Institutional Planning and Analysis](#) [144] both helped AMS collect data [145, 146, 147²⁶]; however the analysis of the data is a faculty responsibility. It is difficult to free up time for faculty to do this work while also teaching and conducting research. While the growth in the size of the faculty, the hiring of assessment support in the schools, Division of Student Life, Senate, and IPA, and the accumulation of data from annual assessment reports will undoubtedly streamline the process over time, the synthesis and integration of data required for the self-study is a major intellectual activity. As discussed in the Sustainability section of Essay V, SACA will track the resource implications of Program Review along with those of annual Assessment in order to recommend how to reward faculty with leadership responsibilities in annual and periodic assessment.

²⁴ As required in the WASC Commission's Action Letter, the AMS review will be finished by the time the team visits. By then, too, we will have self-studies in hand and will have scheduled (perhaps completed) review team visits for the academic programs up for review this year.

²⁵ See Essay V, Part A for further discussion of the resource implications, and Essay II, Part A for a discussion of the impact our administrative structure has on workload.

²⁶ These are Excel files and have to be opened manually from the exhibit portfolio.

But part of the cost in time came from the policy itself. Our original policy [122], constructed from pieces of policies used by other UCs, was extremely complex and detailed. Responding to the sense that the policy micromanaged some and muddled other aspects of Program Review, UGC over the past two semesters has revised the [policy](#) [148] substantially, in part to simplify the process itself (GRC will be following suit [124]). First, UGC clarified the length of the normal review cycle (the original policy, drawing at different points from policies of different UC campuses, was ambiguous). Second, UGC reduced the time frame for program review, so that the self-study and review take place in one year, and the follow-up in the next year [148]. Third, UGC simplified the reporting procedures: instead of two reports, there will be one from the Program Review Committee (including both internal and external committee members); the report will be received by the Program Review Subcommittee of UGC, which instead of writing an additional report, will pass it on to UGC, with the only addition being any corrections of fact submitted by the program. Fourth, UGC simplified the policy design so it is easier for participants to follow. Finally, UGC's Program Review Subcommittee members realized in the course of doing the Program Review that there had been no clear assignment of responsibilities in our policy, so the revised policy clarifies who does what and when. Under the direction of UGC, the Senate Office, which provides logistical and analytical support for Program Review, is developing a detailed set of procedures and has hired a new Principle Analyst to support Program Review.

All of these procedural changes follow a much more important, more fundamental change in the policy. We shifted from a focus on the process to a focus on the purpose of review, as the [policy](#) [148] now makes clear: "Systematic, regular review of undergraduate academic programs is intended to ensure that students are learning what we intend to teach, that our educational efforts are appropriate to a diverse student body, and that the benefits of scholarly inquiry will inform educational processes and outcomes." With purpose clarified, the policy in turn articulates an analytic process based on four fundamental questions about program goals and outcomes [148], asking, in brief, "What do you think you are doing? . . . How are you doing it? . . . Who is doing it? . . . [and] How well . . . ?" The information we ask programs to analyze flows from these questions, so while the new policy requires programs to use some kinds of data, it also gives programs flexibility to address these questions in any ways they find pertinent and useful. In short, as a tool to improve learning, both of our students and of ourselves as scholars, Program Review is now easier to use.

In sum, we rate our undergraduate Academic Program Review as follows for each of the five criteria of the WASC *Rubric for Assessing the Integration of Student Learning into Program Review* [128].

1) The Required Elements of the Self-Study are on the border between "Emerging" and "Developed"; programs provide an outline of Program Learning Outcomes, assessment studies, findings, and resulting changes; programs are asked to assess the effectiveness of their assessment plans, and revise them as necessary.

2) The Process of Review is on the border between "Emerging" and Developed" according to WASC criteria, in that the policy asks for evaluative feedback on direct and indirect evidence of student learning. Given that the first annual assessment was due concomitantly with the Program Review, the review itself relied on other indicators of student learning. While these included the traditional indirect evidence, they also included evaluative feedback on student publications as direct evidence of student learning. Each subsequent review will have a deeper data set of direct evidence.

3) With respect to the Budgeting and Planning criterion, the policy is designed to feed into campus planning, but we do not yet have enough experience to analyze the efficacy of this process. Thus, we are at the "Emerging" level now. We will provide an update at the time of the site visit in March.

4) We are “Developed” with respect to Annual Feedback on assessment efforts. In 2010, a faculty-staff subcommittee of the WASC Steering Committee reviewed reports [66], providing feedback to individual programs [55] and SACA [149]. SACA has adopted this procedure as part of its annual agenda (see Essay V, Part A).

5) Finally, the Student Experience falls between “Emerging” and “Developed”; the policy requires the self-study to include not only assessment reports, but the “direct evidence” on which those reports are based, and these are examined by the Program Review team. As part of the Program Review process, students respond to a confidential questionnaire [150] and the Program Review team meets with students as part of the review process [135].

The policies we developed largely parallel those described in the [WASC Resource Guide for ‘Good Practices’ in Academic Program Review](#) [151]. Most importantly, this is a faculty led process and designed to be collaborative and collegial. While the Program Review policy is necessarily summative as well as formative, the assumption is that this is an important tool for the ongoing improvement of undergraduate education. Our practices also are in accordance with the University of California Undergraduate Educational Effectiveness Task Force [Recommendation #3](#) [47, p.8], that Program Review should “include a review of the department’s learning assessment process.”

B. Student Affairs Program Review

The program review process for co-curricular programs has been undertaken in parallel to that for academic programs. The Student Affairs Program Review policy [123] is for the most part based on the policies recently developed at UCLA, and is in keeping with best practices.²⁷ As with Academic Affairs, Student Affairs has already improved, and expects to continue to improve, its Program Review policies.

In summer, 2009, three Student Affairs departments - the [Student Advising and Learning Center](#) (SALC) [152], the [Career Services Center](#) (CSC) [153] and the [Students First Center](#) (SFC) [154] - were selected to pilot the Student Affairs Program Review policy [123]. These three units, as our Program Review pioneers, experimented with methods for conducting the self-study and revealed ways to strengthen the Program Review policy. For example, the policy requires student participation in the self-study only if the department receives student registration fees, but all three departments included students in working groups [155] because all felt that student insights were invaluable.

The timeline and components of the Student Affairs program review process [123] include 1) pre-review preparation (3-4 months), 2) department self-study and report (5-6 months), 3) external program review site visit and report (2-3 months), 4) development of the department action plan (2-3 months) and 5) implementation (final month and beyond). On initiating the process, it became clear that Student Affairs units needed expert support; thus, the Division created a part-time (40%) position of Coordinator of Assessment, Evaluation and Research.

One purpose of the pilot year was not only to test the policy and processes, but also to educate members of the Student Affairs staff about program review. For this reason, each program review team [155] included a staff member from one of the departments up next in the Program Review schedule queue [126]. This opportunity to experience the process before one’s department conducts the self-study is invaluable. One Student Affairs staff member commented, “I found it extremely helpful to be a part of a Program Review team prior to going through our own Program Review. The best thing I took away from being a part [of the review] was the way they set it up, meeting once per week and going over the different areas each week. It kept us focused and on track.” The heads of the departments undergoing Program

²⁷ Schuh, J.H. and Associates. [Assessment Methods for Student Affairs](#). San Francisco: Jossey-Bass, 2009.

Review reported that the process, while time consuming, allowed the staff to celebrate past accomplishments and begin to envision future goals which brought renewed energy and excitement. One department implemented changes that were identified during the self-study team meetings, rather than wait for the external review and action planning process. For example, the Students First Center improved the [comment card](#) [156] approach to feedback from students who engage their [website](#) [154].

All three departments completed the self-study reports [157] by the end of the summer 2010 in preparation for external review site visits in fall. Meanwhile, two more departments began the Program Review process in June 2010 and will begin the self-study process this fall. One additional component will be included in the 2010-11 Program Reviews which is part of the policy but was not tackled by three initial departments. A comprehensive performance evaluation of the unit head will be included in the Program Review process, starting in 2010, which helps distinguish the formative assessment of the department's effectiveness with the feedback that is directly related to the unit director's performance.

The Vice Chancellor and Associate/Assistant Vice Chancellors will review the action plans to determine the short and long term resource implications that will need to be prioritized and funneled into the annual budgeting process. It is our intention that departments which conscientiously complete the Program Review process feel their work is recognized and that reasonable efforts are being made to identify resources to help them complete their action plans.

To gain some insight into the strengths and weaknesses of the Division's Program Review process, Student Affairs evaluated their Program Review policy and process using the WASC *Rubric for Assessing the Integration of Student Learning Assessment into Program Reviews* [128]. Although designed for academic program reviews, much of the language is focused on student learning and, thus, is appropriate to that aspect of Student Affairs' activities and associated Program Review practices. With this focus on student learning, we drew the following conclusions for each criterion.

1) The Required Elements of the Self-Study are "Emerging." That said, the rubric's focus on elements related to learning outcomes excludes services and programs that are critical to Student Affairs Program Review. Our policy encourages using standards that are more inclusive, such as those identified by the Council for the Advancement of Standards or by national professional organizations (for example, NACE for Career Services). We need to directly address the unit's relationship to student learning to move to a "Developed" score.

2) The Process of Review is "Developed." Our process includes an internal self-study team as well as external review panel analyzing evidence and evaluating programs and services. Both groups are selected based on their experience and expertise.

3) The link between Program Review and Planning and Budgeting is "Developed." The program review process is integrated into planning and budget at the final step of the action plan, where plans for improvement are linked to budget implications.

4) Annual Feedback on Assessment is "Developed." All departments receive feedback on their annual assessment plans from the Division's Assessment Coordinator in an iterative process where drafts are shared back and forth, until the final plans are accepted and forwarded to the Vice Chancellor.

5) The Student Experience is "Emerging." Although students are included on the Program Review self-study teams, and external reviewers meet with groups of students during their time on campus, the rubric expects more significant student involvement to be considered "Developed." Since our Program Review process is in its pilot phase, we anticipate incorporating more meaningful student involvement when we update the process.

ESSAY IV: STUDENT SUCCESS

Introduction

In this section of the EER, we review and update data on (1) student retention and graduation rates, and (2) student satisfaction. We also (3) identify pertinent institutional changes that have occurred since the CPR in July 2009, and describe (4) programmatic efforts to improve our students' success.

Throughout, we append updated tables from the CPR's [Student Success Essay](#) [28] to provide one more year's worth of data that augment our evolving benchmarks for student success. In general, one additional data point does not warrant strong conclusions about trends, but each year's evidence can show cumulative trends as potential indicators of change, many of which appear to be positive. Since our new campus environment remains dynamic, we must interpret data about our student success efforts with caution. Thus, while we are responsive to campus data, we also consider our efforts in a broader context of best practices derived from research into higher education in the U.S.²⁸

A. Updated Student Retention Data (CFR 1.2, 1.5, 1.7, 2.10, 2.12, 2.13, 2.14, 4.4, 4.5)

Retention and graduation rates are common and clear institutional measures of student success and have been tracked in American higher education for decades. We collect and compare data on first year retention [78] and on graduation rates [79], comparing UC Merced's performance by national, state, and UC benchmarks. In short, these comparisons show that UC Merced, like its sister campuses, has higher first time freshman retention rates than the national average, is roughly on par with the UC benchmark universities, but retains students at the lowest rate among the UC campuses [78]. Graduation statistics are not yet mature enough to warrant comparison. The only graduation statistic currently available is the four-year rate for the incoming class of 2005, which is [33.3%](#) [158]. This cohort's five-year rate will be available for the site visit in March 2011. Our current prediction is that it will be approximately 52% [159].

First Year Retention: Since 2005, our first year retention rate has been higher than the national average for four-year public colleges and continues to improve in relation to research universities, and in particular to UC system benchmarks [78]. For instance, our 2007 first-year retention of 79% was just above the national average of 77% but well below the 92% average for other UC campuses. In 2008 our retention rate had improved four points to 83%, and the following year another four points to 87%, bringing us much closer to the 2008 UC-system rate of 92%.

To better understand our first year retention rate, we analyzed five entering cohorts by [gender](#) [160], [ethnicity](#) [161], [original major](#) [162] and [applicant type](#) (e.g. early referral) [163]. A side by side comparison of these data [164] for a subset of variables, including Pell Grant Eligibility (a proxy for low income), reveals no remarkable differences among first year students. We appear to be retaining students at the same rate, regardless of ethnicity, gender and low-income status. Our campus is proud of the ethnic

²⁸ Our focus has been on promoting student engagement. See Harper, S.R. and S.J. Quaye, eds. [Student Engagement in Higher Education](#). New York: Routledge, 2009; Astin, A.W. [What matters in College](#). San Francisco: Jossey Bass, 1997; Kuh, G.D., J.H. Schuh, and E. J. Whitt. [Involving Colleges: Successful Approaches to Fostering Student Learning and Development Outside the Classroom](#). San Francisco: Jossey Bass, 1991. Tinto, V. [Leaving College: Rethinking the Causes and Cures of Student Attrition](#). 2nd ed. Chicago: University of Chicago Press, 1993.

diversity of our student body and would be concerned to note if any ethnic group was being retained at a lower rate, but the differences are small and inconsistent, creating hesitancy to interpret.

These additional analyses are doubly important on a campus as diverse as UC Merced. Our student body does not contain any [majority ethnic group](#) [165] and 58% of our 2010 freshman class is [first generation college students](#) [166]. One of the characteristics of the UC Merced student body that factors into their success is financial need. UC Merced students are eligible for Pell Grants in greater percentages than any of our UC counterparts [167] and, each year, the percentage of students applying for and receiving aid increases [168]. Given these at-risk populations, it is useful to consider what happens to freshmen who do not remain at UC Merced. Composite data for the 2005-2008 cohorts indicate that a substantial percentage of these students enroll at another institution [169].

Our WASC Visiting Team charged UC Merced to conduct deeper analyses of our retention and graduation rates. Knowing that the graduation rate is a function of the retention rate and cannot improve if students are not retained earlier in the pipeline, the focus for the expanded investigation was the first year retention rate. Additional analyses were conducted to explore possible differences between the kinds of students we are retaining and the kinds of students we are losing. Specifically, we compared students who were retained to those who were not, after their first, second and third years, with respect to average high school GPA, average SAT score, first generation status, and Pell Grant eligibility [170]. These data reveal no clear, actionable differences or trends.

Similarly, the recent variability in UC Merced cohort success [164] makes it difficult to draw meaningful conclusions when benchmarking metrics of UC Merced student success against UC averages [171]. For example, the most recent comparative data suggest that, in contrast to the UC average, white students at UC Merced have slightly lower first year retention rates than other ethnicities [171]. However, between 2008 and 2009, the retention rate for this population at UC Merced increased 8 percentage points [164], making it comparable to that of other populations on our campus.

Generally, the “non-findings” described in this section reflect the inevitably dynamic nature of the first years of a new university. They also, however, reflect what we are doing well. Since low income, first-generation students are less likely to persist, it is important to highlight their success at UC Merced. Our First Year Experience initiative focuses on assisting all of our students to successfully transition into our academic community from orientation through retention into the second year. We expect our efforts will further improve our rates and move us even closer to other UC campuses, a prospect suggested by our 2009 retention rate of 87% [78]. For example in 2008, the most recent data available for the UC system, UC Merced’s first-time freshman retention rate is about four percentage points from UC Riverside’s and about five percentage points from UC Santa Cruz’s rates [172]. Our programmatic interventions designed to retain first year students are described later.

Sophomore Year Retention: At UC Merced, the 2009 rate for [second year retention](#) [158] improved seven percentage points to 74% over the 2008 rate of 67%. Clearly, our campus continues to perform behind the other, more established UC campuses [171], but we are encouraged by these recent improvements. As we weave our first year programs into the fabric of the campus, our support systems and program interventions will shift attention to the second year experience, as evidenced in the Student Affairs Strategic Plan 2007-12 [118]. Some programming and support, however, is emerging (like NSED 198 discussed below) or already exists. For example, tutoring and other academic support programs are available to freshman and sophomores alike. Finally, our growing [study abroad program](#) [74] is in effect a retention program for students who might otherwise leave to broaden their college experience.

Transfer Student Retention: Continuing the pattern, [retention rates for both first and second year transfer students](#) [173] also showed strong improvements in 2009. First year rates increased five percentage points to 86% and second year retention rates increased 17 percentage points to 58%. Again, the most recent UC data from 2008 show that our first year retention rates lag those of our sister campuses [174]. However, our 2009 increases are encouraging and appear to signal that our transfer students are receiving the curricular and co-curricular support they need to succeed. For example, the Office of Admission has expanded the Transfer Admission Guarantee (TAG), making it available [online](#) [175]. This clearly outlines to community college students what they need to do for a smooth transition to UC Merced. Transfer Student Orientation [100, 101] also has been revamped to better prepare our new transfer students for success at UC Merced. Indeed, the broader pattern of increased retention rates across undergraduate cohorts [158, 173] suggests that our campus' academic and co-curricular programming is increasingly meeting student expectations and needs.

B. Student Satisfaction Data (CFR 2.10, 2.11, 2.12, 2.13, 4.5, 4.6)

The WASC [Visiting Team's response](#) [3, p.43] to the CPR identified improving student satisfaction as critical to supporting student success. In the interim, we have striven to better understand our campus climate and how we measure satisfaction among our students. We are fortunate to have several data-rich surveys to inform campus planning and decision making including the New Student Survey [176], the Graduating Senior Survey [177], our national benchmarking surveys which alternate between the system-wide [University of California Undergraduate Experience Survey](#) (UCUES) [178] and the [National Survey of Student Engagement](#) (NSSE) [179], and our annual survey of graduate students [180].

As the campus community continues to explore how to improve our retention rates for different groups of students, it is important to better understand students' satisfaction and intentions. Satisfaction begins with the reasons students attend an institution. Data from the New Student Survey, conducted four weeks after student arrival on campus, reveals that consistently for the last four years UC Merced was the first choice of about 20% of the students, second choice of about 20%, and third or lower choice for the remaining 60% or so of first year freshman [181]. This has the potential to create dissatisfaction and increased impetus to transfer or leave. At a minimum, it creates a sense of lack of institutional commitment or connection.²⁹ That said, New Student Survey results [182] also show that consistently large percentages of our first year freshman report being somewhat or very satisfied with nearly all aspects of the campus' facilities³⁰ and their initial academic experiences. Satisfaction with social opportunities has improved over the earliest years as has satisfaction with the overall college experience. This latter rating has improved with each passing year to reach quite high levels of satisfaction as of 2009 [182].

Consistent with these increasingly positive reports of early experience, a steadily decreasing percentage of freshmen are reporting in the New Student Survey that they are very or somewhat likely to transfer to another college before graduating from UC Merced [183]. The self-reported likelihood of transfer has decreased from 56% for the first entering class in 2005 to 46% for the 2009 freshman cohort. One could argue that the fact that a smaller percentage of students actually transferred than indicated intent to transfer is evidence of our success. The percentage of new students expecting to change their career expectations or majors also has steadily declined [183]. This also is positive for UC Merced since if

²⁹ Tinto, V. [Leaving College: Rethinking the Causes and Cures of Student Attrition](#). 2nd ed. Chicago: University of Chicago Press, 1993.

³⁰ Some student dissatisfaction is noted in very typical areas: namely food service and transportation, but the Dining Commons/Lantern are showing a slight but steady increase in the four years of data collection as services, space, offerings and hours have expanded. The campus bus service, Cat Tracks, also has added new routes every year.

students make a career change that requires a change in major, they may have to transfer, if we do not offer that major.³¹

The Graduating Senior Survey [177] was conducted in spring 2010 and included all students who were expected to graduate in May. It yielded 219 responses [185] for a 56% response rate. We did not ask general questions about how satisfied students were with their education; instead, we had series of questions designed to help us measure student satisfaction with specific aspects of our campus environment, such as utilization of the library, or whether or not students had internships, or how much they had borrowed while enrolled. In the series of questions about student finances, however, one question is a useful surrogate for overall satisfaction: “Please rate your level of satisfaction with the value of your education for the price paid.” If all three positive responses are combined (Very Satisfied + Satisfied + Somewhat Satisfied), 88% of the respondents indicated satisfaction with their education in terms of cost [185]. In future surveys of graduating seniors, we anticipate asking direct questions about satisfaction with educational quality that might provide insights into the culminating impressions of our seniors. Subsequent alumni/ae surveys will ask the same questions about financial and educational satisfaction when career and other life experiences of our graduates can further inform their responses.

UCUES provides another source of data that refines and contextualizes our understanding of student success. 2008 UCUES data [186] revealed clear strengths of UC Merced relative to our sister campuses, including relatively high rates of engagement in many active learning experiences. It also revealed areas for improvement in several student satisfaction measures, including student perceptions of our commitment to undergraduate education, academic advising by staff, availability of courses needed for graduation, and choice of UC Merced [186]. Administered again in spring 2010, UCUES data are available for UC Merced, although the campuses on the quarter system did not report their 2010 data in time for us to make cross-campus comparisons using these most recent data. Assuming some stability in our sister campus’ results, changes in our numbers over two years suggest that we are closing the gap in most areas [187]. Unfortunately, there was no improvement in senior satisfaction regarding the availability of courses for graduation. Our plans, as articulated in the recently signed [MOU with the UC Office of the President](#) [188, p.1], to strengthen existing undergraduate programs through faculty hires over the next three years, rather than develop new majors, should help to address this issue.

C. Graduate Student Experience (CFR 1.7, 2.10, 2.11, 2.13, 4.4, 4.5, 4.6)

As with undergraduate retention rates, it is difficult to draw any meaningful conclusions from early graduate student retention data; the variation is exacerbated by relatively small [enrollments](#) [189] and complexity in tracking paths to degrees. However, the most recent 2008 data show a nearly 6 percentage point increase in first year doctoral cohort retention over the 2007 level, rising from 87% to 93%, while second year doctoral rates dropped about 2% percentage points from 83% to 81% [190].

Generally, our emerging doctoral student retention and graduation rates are comparable to the limited data that exists both for the UC and nationally. For example, UC Merced’s first year attrition rate of approximately 10%, calculated across 2004-2008 cohorts, is only three percentage points greater, and our second year rate of 16%, only two percentage points greater, than those reported for public institutions by the PhD Completion Project [190, 191]. Similarly, UC Merced’s early four-year doctoral graduation rate of 8%, calculated for the 2004 and 2005 cohorts, is close to the Project’s 10.5% rate [190].

To gather complementary data on graduate student satisfaction, UC Merced’s Graduate Division surveys graduate students each summer [180]. As is the case for retention and graduation data, small

³¹ Since we now have more [majors](#) [184] in place, we are better able to accommodate those who do change career paths.

student cohorts and associated inter-annual variability make the results challenging to interpret, as exemplified by general satisfaction data from 2008-2010 [192]. Recent revisions to the survey in response to stakeholder feedback also limit inter-annual comparisons for certain questions. That said, for the last three years, “your academic experience at UCM” has consistently gained the highest percentage of favorable evaluations and “your student life experience at UCM” the lowest [192]. In keeping with these latter results, UC Merced hired a Coordinator for Graduate Student Services as described below.

Beyond this, we share the most recent 2010 data to provide a snapshot of the graduate student experience. In 2010, respondents reported an 80% overall satisfaction rate with their program, with 91% reporting to be very or somewhat satisfied with the intellectual caliber of faculty [193]. It appears that students are pleased with and perhaps drawn to UC Merced by this strength. Campus interactions and relationships also appear to be clear strengths of the UC Merced graduate experience [194].

Respondents were relatively less satisfied with training in research methods, the quality of graduate-level teaching by faculty, preparation for teaching in the context of their program, and UC Merced’s facilities, with 79%, 74%, 74%, and 69% respondents respectively reporting to be very or somewhat satisfied [193]. More generally, about 68% reported that they would select the same university again or recommend this program to another individual [195].

Responding to feedback from graduate students, the Division of Student Affairs hired a Coordinator of Graduate Student Services (GSS) in March 2008. To build community among the graduate students and to better meet student needs, she has worked collaboratively with campus entities to establish the Lyceum Series [196], which includes social events and diverse workshops on topics such as writing a CV to preparing taxes. She has also organized a [peer mentor program](#) [197], launched the GSA Leadership Program [198], and maintains the [GradLife forum](#) [199], an interactive bulletin board for graduate students. Using participant feedback and in consultation with the [Graduate Student Association](#) [200], the GSS Coordinator also has made significant efforts to improve [graduate student orientation week](#) [201]. This work is facilitated through monthly meetings of a committee composed of graduate group coordinators from each School, the Office of International Affairs, Graduate Division staff, and Center for Research on Teaching Excellence staff [202].

The [Center for Research on Teaching Excellence](#) (CRTE) [232] is also responding to Graduate Student needs for better support in teaching. To help address challenges in accessing support in real time [203], the CRTE is developing asynchronous delivery systems for teaching support, including [podcasts of workshops](#) [204] and [a multi-media publication](#) [91] (funded by a FIPSE grant) on teaching.

Finally, graduate students themselves are undertaking assessments to improve the graduate student experience. In fall 2010, the Graduate Students Association is offering School-based group interviews to gather information about the student experience that complements that gained from this annual survey. GSA plans to use these data to help the campus establish priorities for improving student academic experiences and quality of life. More generally, UC Merced will continue to gather data on graduate student satisfaction in conjunction with monitoring retention and graduation rates.

D. Institutional Changes and Updates (CFR 1.5, 2.10, 4.2, 4.3, 4.5)

In the [Student Success Essay](#) included in the CPR 9 [28, p.15], some next steps to promote student success were identified. The Office of Institutional Planning and Analysis (IPA) is developing several predictive models to guide the admission process and met in October 2010 with the Director of Admissions and the Chair of Undergraduate Council (UGC) to discuss strategies that will work in concert with the new “[Entitled to Review](#)” [205] application process for the UC system to be launched before the

fall 2010 recruitment cycle. IPA, UGC and Admissions expect to have predictive models available for fall 2011 admission decisions (see Appendix IV, Part B).

The Office of the Registrar is collaborating with the Office of Student Life to launch a co-curricular transcript that will help students document their co-curricular learning. Concomitantly, this will allow the institution to track students' out-of-class learning opportunities. During 2010-2011, student participation data will be gathered and entered in Banner to prepare for future generations of the co-curricular transcripts.

Since 2008, we have participated in the [Beginning College Survey of Student Engagement](#) (BCSSE) [206]. In 2010, IPA administered the survey in the summer, resulting in an institutional report [207] as well as 467 individualized student advising reports by the start of the academic year. The BCSSE advising reports are designed to communicate activities and expectations of first year students and to be used as guides in discussions with an academic advisor. The BCSSE advising reports [208] were discussed in the Student Advising and Learning Center bi-monthly advisor meeting [209], generating ideas for feedback to IPA about how to improve the presentation of the reports and how to distill more information from them, such as trends, longitudinal findings, and responses for special populations. This collaboration demonstrates that across the campus, we are using data to better understand our students and to improve our practices.

Finally, as anticipated in our CPR, the Enrollment Management Council [210] began meeting on October 15, 2010 [211], discussing enrollment goals, processes and retention.

Impact of Growth: The impact of enrollment growth is a constant at this stage of UC Merced's development. Our campus situation changes even as protocols, policies and programs are being established. This makes our retention and satisfaction data challenging to interpret because each of our five classes entered what seems to be a different institution. The first class in 2005 had few facilities, nine majors [212], no clubs or organizations, indeed no student role models, but the entering Class of 2010 has 4 academic buildings, [19 majors and 22 minor programs](#) [184], a full complement of campus co-curricular experiences including over 130 clubs and organizations [213] and an extended two Weeks of Welcome [214], and an entire class of alumni rooting for them [215].

On-campus housing is a critical locus for promoting student success. The campus goal in our [Long Range Development Plan](#) [216, p.51] is to house 50% of our students on campus. Not only does national best practice tell us that students who live on campus are more likely to persist³² but our own analysis [217] verifies that UC Merced on-campus first year students have significantly higher GPAs than first year students who do not live on campus. For example, in fall 2009, [76% of the cohort](#) [218] of 1128 entering first time freshmen lived on campus. The mean GPA for these resident, first year freshmen of 2.63 was significantly higher than the mean GPA of 2.4 observed for students who lived off campus. Several plausible explanations for this difference were explored including differences in high school GPA, SAT scores, Pell grant eligibility (a proxy for low income status), and academic School, but further analysis did not suggest any of these factors contributed significantly to the difference in average GPA [217].

While construction and enrollment growth signal success, we must also reflect on the impact growth has on our campus culture and commitment to personalized attention to our students' success. The New Student Survey asked respondents to select how important they found various reasons for choosing to attend UC Merced. The most important reasons from the 2009 cohort were the opportunity to work closely with faculty, the opportunity to be part of something new, the personal attention from faculty and staff, the small size of the campus, and the reputation of the campus and the UC system [219].

³² Astin, A.W. [What Matters in College](#). Jossey-Bass: San Francisco, 1997.

The opportunity for undergraduate students to engage in research with faculty is a feature of the UC Merced experience, due to its size, and it is a proven retention strategy, especially for at-risk students.³³ While the opportunity to be part of something new still exists on this growing campus, this feature coupled with the small size and personal attention (noted by first year students as important) could dissipate as the campus enrollment increases. The faculty and administration are focusing on how to scale our current successes to maintain the campus culture and commitment to student success in the midst of growth.

E. Programmatic Interventions (CFR 1.5, 2.10, 2.11, 2.12, 2.13, 4.3, 4.5, 4.6)

In this section, we provide updated information on programmatic interventions designed to improve the retention of first year students, then discuss attrition and our strategies to counteract that phenomenon, and finally provide plans for our focus on the retention of sophomore students.

Focus on First Year Retention:

Anti-Melt³⁴ Campaign: At UC Merced, the [Students First Center](#) (SFC) [154] in the summer of 2007 launched their first “Anti-Melt” campaign to engage incoming students in the process of transitioning to college, including information on matriculation, financial aid, housing, course selection, etc. Students are engaged in a variety of ways, including paper mailings, phone-calls, e-mailings, and web-based materials, and progress is tracked through activity levels via the single resource portal, their My.UCMerced.edu account. These activities levels [220] also allow SFC staff to gauge student desire to enroll at UC Merced. Regularly improved to better meet student and parent needs as well as to manage SFC staff workloads and budget [221], this early engagement in part serves as a steady resource to help students (and their parents) understand many of their new responsibilities as college students and anticipates and supplements orientation sessions, move-in activities, and other first-year initiatives. This initial contact from the Students First Center also reinforces its function as a student-friendly “one stop shop” and is unique within the University of California system. The ability to complete many transactions at one window is designed to decrease the feeling of “run around” and increase student satisfaction. Despite the attention to improvement, melt rates have remained fairly constant [419]. Nonetheless, we have seen [yield rates](#) [222] rise, modestly but consistently, from 5% in 2007 to 5.3% in 2008, 5.9% in 2009, and 6.6% in 2010.

Orientation: Among its retention goals, the Division of Student Affairs intends to better align summer orientation [98, 223], move-in weekend and welcome weeks (now expanded from one to two weeks [214]) in order to help students more quickly make the transition into our academic community and to inform them about the resources and support that are available to them on campus. In 2010, the expanded Weeks of Welcome theme was “K.E.Y.s (Keep Educating Yourself) to Success.” [224] Programs were co-sponsored by many departments and student clubs, and were organized around the sub-themes of Explore, Connect, Lead and Succeed [214].

First Year Programming in Residence Halls: Since about 75% of our first year students [live on-campus](#) [218], residence halls offer prime opportunities to extend the educational environment outside of the classroom. [Housing and Residence Life](#) [225] has developed a special [First Year Experience Program](#) [226] for all first year residents that includes a series of workshops and easy access to specially-trained [peer academic advisors](#) [70] who live in the residence halls with first year students. Additionally, the residential

³³ Nagda, B.A., S. R. Gregerman, J. Jonides, W. von Hippel, and J.S.Lerner. “Undergraduate Student-Faculty Research Partnerships Affect Student Retention.” [The Review of Higher Education](#), 22 (1998) 55-72.

³⁴ Across the country, enrollment management specialists refer to the students who do not materialize between accepting their admission and enrolling in classes as the “melt” of the class.

staff works collaboratively with faculty and academic staff to launch Living/Learning Communities. In 2010, [three themed learning communities](#) [226] are available for first year students. Students not living in residence halls also are encouraged to work with [peer mentors](#) [227].³⁵ The goal is to connect all incoming students with appropriate and complete support to help them make the transition to college.

First Year Experience (FYE): Many universities across the country have launched FYE initiatives with academic and co-curricular collaboration to ensure students make a smooth transition to college.³⁶ At UC Merced, we convened meetings with representatives from the Schools, Center for Research on Teaching Excellence (CRTE), the Merritt Writing Program, the Library, and Student Affairs [228] to better understand what programs, services and support are currently being provided to first year students and what else is needed. The result of these meetings was the development of a matrix to easily identify helpful programs and services [229]. Based on best practices across the country, First Year Student Learning Outcomes have been drafted [230] and are being reviewed by relevant faculty, staff and student stakeholders. Finally, Student Affairs developed a First Year Experience [website](#) [231], which provides first year students with a single point of access for first-year related resources, and a logo, which visually signals: this special workshop is for you.

As part the FYE initiative, the [Center for Research on Teaching Excellence](#) [232] began facilitating in fall 2010 a working group of faculty and staff interested in instructional issues related to first year student academic success [233]. This group brings together 21 ladder-rank faculty and non-Senate lecturers, representing approximately 28% of the faculty teaching freshman-intensive courses,³⁷ and two instructional staff from the library [234]. In fall 2010, the group provided feedback to Student Affairs on the proposed first year student learning outcomes and developed resources for freshman instructors describing classroom and co-curricular support for freshman academic skill development.

Peer Mentoring Program: The [Peer Mentoring Program](#) [227] helps new freshmen adjust to the academic and social demands of university life by pairing them with more experienced upper-division students who have demonstrated academic and personal success. Of 924 first-time freshmen in fall 2008, 18.5% participated in the mentoring program. Their fall-to-fall (2008-2009 AY) retention rate was 86%, compared to the overall rate of 82% for all freshman. Although this difference might not initially appear statistically significant, it is notable that Peer Mentor participants are recruited from [Summer Bridge](#) [235] and Writing 1. These students tend to be first-generation, Pell grant students, who are least likely to succeed in college. That this cohort's retention rate is slightly higher or comparable to their highly prepared peers is encouraging. When feasible, we plan to compare peer-to-peer cohorts to fully assess the value-added factor of peer mentoring.

Focus on Reducing Attrition: As reported in the CPR, we continue to use a number of interventions to promote student success. Below we describe developments in some of these areas.

Undergraduate Studies 10: We gave a preliminary report on this first year success course [236], inaugurated in the fall of 2008, in the CPR. The inaugural offering of this course in the fall of 2008 provided a small sample of 25 undeclared new students. Of the 25, 20 finished the first semester in good standing, four finished that semester on Academic Probation (GPA 1.5-1.99), one finished Subject to Dismissal (GPA 1.22). The 80% who finished their first semester in Good Standing compares favorably

³⁵ Initial assessments show that the impact of such mentoring on student retention is positive (see description of the Peer Mentoring Program).

³⁶ Upcraft, M.L., J.N. Garnder, & B. O. Barefoot, B.O. eds. [Challenging and Supporting the First-Year Student: A Handbook for Improving the First Year of College](#). San Francisco: Jossey-Bass, 1997. Upcraft, M.L. and J.N. Garnder. [The Freshman Year Experience: Helping Students Survive and Success in College](#). San Francisco: Jossey-Bass, 1989.

³⁷ Course enrollments of more than 45% freshman.

to the general population of undeclared freshmen, who showed a Good Standing rate that semester of 73.9%.

Our analysis of the spring 2009 offering of USTU 10 (reported in our CPR) suggested that using USTU 10 to address only students subject to dismissal yielded relatively weak results, as absenteeism was inordinately high. For this reason, the spring 2010 sections of USTU 10 were targeted at first year students on academic probation rather than dismissal students (see next paragraph for approaches taken toward some students subject to dismissal). At mid-semester, half of those enrolled had satisfactory grades in all courses, which is a 50% improvement over the previous year, when 100% of the students had at least one failing grade.

Undeclared Academic Advising and the “De-majoring” Policy: In an effort to retain students who we believed could be successful, a [de-majoring policy](#) [237] was implemented at the end of fall 2008. Selected students who had declared a major and who were subject to dismissal at the end of the term were given a second chance by being moved to Undeclared status. There, they could explore other majors and receive intensive advising and support. The first semester that a student is de-majoring, the student must follow an Academic Support Agreement [238]. De-majoring students will most likely remain undeclared a minimum of three semesters before they meet the terms to declare a major again. This is due to the demands of rebuilding one’s GPA through course repeats and as students develop their confidence as learners.

This practice of moving struggling students to undeclared has retained more than 50% of those students who would have likely have been dismissed [239]. De-majoring, however, demands more intensive attention and more frequent one-on-one visits between the advisor and advisee than what is normally offered. In general, this policy is helping to improve retention of the most at-risk students, but puts stress on the advising staff. The Student Advising and Learning Center hired another adviser for undeclared students, placing that office in the newest residence hall, where over 300 first year students live. The idea of resources being readily available to struggling students is well documented in the best practice literature³⁸. Thus, resident first year students will have easy access to their advisor, in the familiar surroundings of their living space. This is an effort to increase the undeclared students’ use of advising services.

Special Academic Advising Program: In the School of Social Sciences, Humanities and Arts, students on academic probation are required to participate in the Special Academic Probation Program [240], a semester long intervention intended to increase student awareness of the skills and resources needed to be academically successful. An analysis of students participating in the program from fall 2006 to spring 2010 (n=181) reveals that 42.5% of students return to good standing in the semester of program participation, compared to 31.3% of special probation students campus-wide. Results of participant exit surveys are being used to continuously refine the program’s effectiveness [240].

EXCEL! Program: Working collaboratively with Natural Sciences faculty, advisors, and the Student Advising and Learning Center, the [EXCEL! Program](#) [241] helps School of Natural Science’s students on Academic Probation and those Subject to Academic Dismissal return to good academic standing. Between fall 2005 to fall 2007, 64% of students on Academic Probation (AP) and Special Probation (SP) returned to good academic standing after one semester (96 out of 149). An additional 9% of AP and SP students returned to good standing after two semesters.

Natural Sciences Early Progress Policy: In 2010, the School of Natural Sciences adopted an “[Early Progress Policy](#)” [242], which requires that any student pursuing a degree within the School of Natural

³⁸ Strange, C.C., and J.H. Banning. *Educating By Design: Creating Campus Learning Environments that Work*. San Francisco: Jossey-Bass, 2001. Schroeder, C.C., and P. Mable. *Realizing the Educational Potential of Residence Halls*. San Francisco: Jossey-Bass, 1989.

Sciences must pass a college level math (Math 5, 11 or 21) and CHEM 1 or 2, prior to the start of their third regular semester of enrollment (fall/spring term) or be shifted to Undeclared status. An augmentation of a pre-existing, institutional course repetition policy, these changes were grounded in an analysis of past student academic performance [243], which showed that a large proportion of students who are not able to successfully complete introductory-level science coursework are later put on academic probation and tend not to be successful later in the school of Natural Sciences. Cognizant of the potential impact on our low income, diverse student population, we conducted an additional analysis the results of which suggest no disproportionate demographic impacts are anticipated [243]. However, the School of Natural Sciences will closely monitor the impact of this policy as it is implemented, particularly with respect to any potential inequities in future accessibility to science degrees for underrepresented students.

Supplemental Math 5 Instruction: To improve student pass rates [244] in the gateway math course, Math 5, supplemental instruction for at risk students was established in fall 2010. Based on the Summer Bridge program's supplemental [math instruction efforts](#) [245], certified peer tutors are facilitating active engagement in problem solving for students who voluntarily attend weekly tutoring sessions at a regularly scheduled times. Given the program's newness, data on the program's impact on student learning and success will be forthcoming.

Fiat Lux Scholars Program: In fall 2009, the Student Advising and Learning Center received a FIPSE grant in to develop an [educational opportunity program](#) [246] for up to 100 low income, first generation students (during the first year of operations) to provide additional academic support and a textbook rental program. A [condition](#) [247] of this money-saving opportunity is enrolling in USTU 010 First Year Success Course [236], along with participation in workshops and additional advising, to ensure optimal use of books and other resources for success. Evidence [248] from the first semester of operation indicates that students who participated in the Fiat Lux program (i.e. textbook renters) attempted a greater number of units, improved their fall to spring GPAs to a greater degree, and had higher GPAs by the end of spring semester relative to a non-participant control group.

NSED 198: Retention of high-performing math and science students is a high priority for the campus. Analysis of student academic retention [249] data shows that 15% of first-time freshman students in the School of Natural Sciences voluntarily withdrew from the UC Merced before entering their third-year. Of those students, approximately 33% had a cumulative GPA of 3.0 or better before their departures from the university.³⁹ In response to this attrition, the School of Natural Sciences is developing a new course NSED 198 [249]. Scheduled for fall 2011, NSED 198 students will be introduced to the many aspects of the modern research university, so they will be prepared to initiate and engage in authentic research experiences in Applied Mathematics, Chemistry, Biological Sciences, Physics, and Earth System Sciences. NSED 198 also is designed to provide a platform for future success and the opportunity for students to gain not only investigative skills, but also mentoring and leadership skills.

Degree Audits: One way to facilitate timely completion of degrees is to provide accurate and timely information about degree requirements and student performance. In October 2009, UC Merced launched [MyAudit](#) [250], an automated degree audit tool that compares student course history with set program requirements and lists requirements still needed for program completion. In preparation for MyAudit implementation, School advisors redesigned academic planning guides [251] for all majors to provide consistent, transparent sources of program completion information. Along with these guides, MyAudit serves as an advising tool that educates students about program requirements, allowing students to make decisions about their preferred paths to graduation. With the help of MyAudit, advising sessions can focus less on course requirements and registration and instead focus more on substantive issues like career

³⁹ This average percentage includes tremendous variation across the cohorts with the 2007 data skewing the results upward.

planning and mentoring. We anticipate that MyAudit will impact student retention and time to degree completion by serving as a consistent “roadmap” to help students plan and complete their academic careers. In less than one year, over 17,000 degree audits [252] have been run by students, advisors and faculty.

Focus on the Second Year and Beyond: As our retention efforts become increasingly coordinated, intentional and multi-faceted in support of the first year experience, we plan to extend our attention and energies more fully to the Second Year Experience. Already, the [housing guarantee](#) [253] for sophomores is in place, and the Student Affairs Strategic Plan (2007-2012) [118] includes a goal on designing a comprehensive and innovative Sophomore Year Experience. This will be another opportunity to strengthen the collaborations between academic and student affairs and focus programming to enhance the inside and outside classroom experiences for sophomores in an effort to retain them at UC Merced.

Finally, as economic uncertainties are one of the primary impediments to retention, UCM is undertaking a 3-year \$10 million dollar campaign [254] to raise money for scholarships and fellowships at all levels. The campaign already has \$3.3 million in commitments [255].

In sum, UC Merced has made progress since the CPR. Every year, we understand our students better and are therefore better able to design opportunities to engage them successfully. Interventions are underway, signaling the strong commitment of faculty and staff to student success. Our administration has validated this commitment in our recent [Memorandum of Understanding](#) [188, p.2] with the University of California’s Office of the President, which emphasizes the value UC Merced brings to the University of California and the state in expanding educational opportunities for the traditionally underserved. We are banking our future on the success of our students, guaranteeing in the “Accountability Metrics” section of the Memorandum to continue efforts to improve graduation rates for “first generation and at risk students” [188, p. 5]. We are proud to help improve the college-going rate in the San Joaquin Valley and to educate the students who will be leaders of California in the decades ahead, and we are optimistic that our interventions will yield continued improvement in student satisfaction, progress toward degree, and other indicators of student success.

ESSAY V: CONCLUSIONS

A. Sustaining Assessment (CFRs 1.2, 1.3, 2.4, 2.7, 2.9, 2.11, 3.4, 3.8, 3.11, 4.2, 4.3, 4.4, 4.6, 4.7)

Sustainability of assessment requires leadership, institutional commitment, established policies and procedures and effective implementation of those policies and procedures. Assessment at UC Merced has to date been overseen by the *ad hoc* [Accreditation Steering Committee](#) [256]. In late 2009, the [Senate-Administrative Council on Assessment](#) (SACA) [257] was created to ensure that a permanent standing body will oversee assessment and analyze assessment data from an institutional perspective. SACA is [charged](#) [43] with coordinating all institutional assessment, planning future assessment activities (including future accreditation reporting), and making recommendations to the administration and Senate on issues such as funding needs and practices for reporting, dissemination, and use of assessment results. There is currently some overlap between (the long-term) SACA and the (short-term) Accreditation Steering Committee, which is expected to complete its work and dissolve in 2011. SACA's initial efforts have primarily involved laying the groundwork for a sustainable assessment system. This includes the goals of adequately resourcing assessment and connecting extant academic and administrative program and unit-based assessment activities, both annual and periodic, to institutional planning and decision making processes. In support of these goals, in its first eight months SACA, has 1) developed a set of Principles for an Institutional Assessment System [44], 2) made resource recommendations, based on these Principles, to the Administration for additional staff to support annual assessment and periodic review in 2010-2011 [44] (SACA will revisit the resource issue every year, ultimately making longer-term recommendations as more information is available), 3) drafted a policy for review of administrative units to establish annual and periodic assessment practices in the non-Student Affairs Administration [8], 4) developed reporting procedures (see below), both to ensure that assessment is primarily formative and to ensure that assessment results are disseminated at the school and university levels for use in planning and budgeting, and 5) agreed to develop a strategy by June 2011 to archive assessment results to simplify reporting and make them accessible and useful to the campus community.⁴⁰

Essay II reports in depth on the results of assessing student learning outcomes in both the curriculum and the co-curriculum. In general, Faculty Assessment Organizers (FAOs) report a need to improve validity of results, and Student Affairs assessment organizers see a need to refine student learning outcomes in order to be able to develop valid direct measures of student learning. FAOs and the entire Student Affairs Division have already modified assessment plans accordingly. Revised assessment plans, program by program [52] and unit by unit [110], articulate annual and multi-year expectations. Coupled with program review (see Essay III), which incorporates the data from and responses to annual assessment [148, 123, 121], these plans will sustain assessment into the foreseeable future.⁴¹

Sustainability takes more than policies; it also takes the commitment and time of faculty and staff to structure, implement, and interpret assessment data. Thus, we surveyed FAOs to get some sense of the time, effort, and collaboration involved in assessment [259]. The time is significant and the burden falls substantially on the organizers, usually with the help of Center for Research on Teaching Excellence

⁴⁰IPA is already developing a digital data warehouse. Developing reporting tools that draw on that warehouse may help to reduce workload associated with annual assessment and program review for faculty, Deans, SACA, the Senate and School-based support staff. As the data warehouse comes on line over the next five years, programs will be able to track annually key student success statistics like enrollment, retention and graduation rates, identifying any trends potentially on shorter time scales than a seven year program review. UCM will also need to decide how to archive annual program assessment evidence and data and how to integrate that data with the currently planned digital data warehouse. SACA's recommendation will take into account both the full range of assessment needs and the current development on campus of digital archiving.

⁴¹ See Essay II: *Analysis of Educational Effectiveness* for discussions of how our assessment plans are developing in light of experience.

(CRTE) and Institutional and Planning Analysis (IPA) staff and one or two other faculty members, to analyze and report the assessment data. In one School, staff was made available temporarily to assist in the administrative aspects of assessment. There is broad faculty involvement in discussing assessment design, collecting and evaluating evidence, and determining curricular and pedagogical responses to the analyses, but the burden of the process rests on FAOs [259]. As expertise develops, FAOs may spend less time developing rubrics, and teams may need to spend less time validating their analysis of student work, but since assessment is an ongoing process of improvement, it is unrealistic to assume that such work will become a part of the background of faculty workload. How this job will be compensated—in workload, pay, staff support, release time, and/or reward structure is yet to be determined. SACA has made recommendations for permanent staff support and intends to revisit the issue yearly until we reach a steady-state and have resolved the issues [44].⁴²

We also examined how well our policies are supporting the development of assessment infrastructure and practices. Beginning our review at the course level, we reviewed all new courses approved by both the Undergraduate Council (UGC) and the Graduate and Research Council (GRC) during AY 2009-2010⁴³ to ensure that, as required by the relevant policies [11, 20], all new undergraduate and graduate courses include learning outcomes. Nearly all approved new undergraduate course requests included course outlines/syllabi with descriptions of the course goals (98%) and course-level, student learning outcomes (96%) [260]. The single course lacking a course outline requested dispensation on the grounds that, as a special topics course, the content would change with the offering. The request did include learning outcomes. No explanation was provided for the two courses lacking student learning outcomes. However, one was the unit bearing laboratory component of a lecture course, which included learning outcomes. Eight of nine GRC approved graduate courses included syllabi with learning outcomes [261]; the remainder, a place-holder for special topics courses, had the requirement waived on the grounds that the syllabus will change each time the course is taught.⁴⁴

We also reviewed Undergraduate Council (UGC) minutes to assess how the Senate body with [final responsibility](#) [12] for undergraduate program and course approval is facilitating development of essential assessment foundations. While assessment issues do not arise in every meeting, minutes of the March 3rd meeting [262], and subsequent memos notifying faculty of UGC recommendations [263], show that UGC is considering and commenting on stated learning outcomes in course proposals, intending not simply to ensure that they are present, but to encourage faculty to submit high quality outcome statements. UGC's efforts at the program level, however, were not as effective. While new majors are being thoroughly vetted for effective assessment [13, 264], new minors have escaped the same level of scrutiny as revealed in our study of policy implementation [265]. Three new stand-alone minors were approved by UGC without any assessment plans. A staff member caught the oversight before any of these minors went “live,” and UGC has revised [the policy for approval of minors](#) [266] to require an assessment plan, ensuring that such slips do not occur in the future. SACA recommends that the Senate analysts for [UGC](#) [267] and [GRC](#) [268] describe in their year end reports how effectively the Senate implements its course and program approval policies and to share these reports with SACA.

In what follows, we describe the plans for a sustainable assessment system, including related issues and milestones for addressing them, to ensure assessment of student learning outcomes and, more generally, attention to educational effectiveness over the next seven years.

⁴² Because administrative assessment has not yet begun, we cannot yet to evaluate the resource implications, but SACA's plan to monitor the costs of assessment pertain to administrative assessment, too.

⁴³ The first full academic year after policies were instituted that required learning outcomes for new course approval.

⁴⁴ Other aspects of our syllabus analyses are discussed in Appendix I, Part A i.

Academic Assessment

The plans for academic assessment have largely been in place since 2009, including policies for periodic program review and for annual assessment. All undergraduate programs are [scheduled](#) [125] for program review.⁴⁵ The first undergraduate program review took place in 2009-2010 and four more are in process, initiating a permanent, cyclical program review process. This process will be organized primarily by the Divisional Senate Office, which has hired a new analyst to provide timely notification of reviews and to support programs as they collect data, schedule review teams, etc. Deans' offices, Institutional Planning and Analysis, and the provost will all support program review, providing data and necessary resources. School deans are also responsible for ensuring that undergraduate and graduate programs engage in annual assessment. In particular, they will collect all course syllabi each semester, appoint FAOs, notify programs of annual report submission deadlines, provide needed clerical support, provide assessment expertise, and negotiate with FAOs for any other resources needed. SACA's role will be to provide feedback on the quality of each program's annual assessment process [40, 269], and to synthesize conclusions across programs and Schools [45]. Beginning in spring semester of AY 2010-11, and using the WASC Steering Committee's work as a model [66, 55, 56], SACA will create a subcommittee [45] charged with reviewing and providing formative feedback on annual program learning outcome (PLO) reports submitted by FAOs.

Assessment in Student Affairs

The 18 units in the Division of Student Affairs [102] began formal departmental assessment in August 2009, and now the Division has developed a robust structure to support and report annual assessment [270]. Program review also is underway with three units currently under review and a schedule for future reviews established. A brief synopsis of the Division's plans to sustain its assessment endeavors follows.

1) **Structure:** As of spring 2010, the semi-annual Divisional leadership retreats include a substantial section committed to assessment [115], whether that is providing the leadership group with additional educational material on the assessment process or sharing results, rubrics and conclusions with colleagues. This will be a permanent practice.

2) **Staffing:** The Division has hired a coordinator of assessment, evaluation and research (40% time). As the Division develops a strong culture of evidence, we anticipate that our coordinator will need to increase her time commitment to help us deepen and expand our efforts.

3) **Annual Calendar:** The assessment components are now tied to the Divisional work calendar [116] so the expectations are clear that assessment plans are due in early September; the completed plans are submitted with the required annual report in June. In this way, assessment is being successfully integrated into the annual reporting infrastructure established in 2005 and will be a part of the Division's annual practices into the future.

4) **Assessment Committee:** We intend to establish in summer 2011 an assessment committee within the Division, which will utilize rubrics [105, 106] to provide feedback to units on their assessment plans and help educate peers about assessment strategies. To strengthen connections between the co-curricular and curricular, as possible, we will involve one or more of the School-based assessment support staff in this work. A summary of the committee's work and conclusions regarding the quality of the

⁴⁵ Existing undergraduate programs have been scheduled; future programs will be reviewed seven years after they begin accepting undergraduate students. All graduate programs will be reviewed beginning seven years after CCGA and WASC approval. Current graduate emphasis areas will, if not on schedule for CCGA review, be scheduled for review as well [124].

assessment practices in Student Affairs will be provided to SACA as part of Student Affairs' Annual Report.

5) **Strategic Planning:** The reports generated by the Assessment Committee will be used in strategic planning. In Summer 2011, we will begin the initial phases for the next divisional strategic plan, spanning 2012-2017.

6) **Division-wide Program Review:** Every department or unit in the Division has been scheduled [126] for program review on a seven year cycle that began in 2009. The Student Affairs program review encompasses outcomes-based assessment designed to enhance organizational performance via the systematic review of data pertaining to department activities, service delivery and use, resource management, and contributions to the advancement of the Student Affairs mission and strategic plan.

Assessment of Non-Student Affairs Administrative Units

We have developed a policy for assessment of administrative units, including annual reporting and periodic review [8]. The process mirrors that for academic and co-curricular programs, with annual assessment feeding into periodic review. The policy provides an overarching framework and establishes shared expectations for administrative assessment and review; units may create their own policies and guidelines that conform to these basic principles but that fit the particular needs of a group. Our aim is to bring disparate, ongoing assessment efforts, including strategic planning exercises and customer satisfaction surveys, under the umbrella of a single basic assessment approach, and to encourage administrative units to incorporate assessment information when formulating budget requests. Nearly all administrative units have identified timelines for developing their assessment programs (see Appendix I, Part B). For the remaining few, SACA expects assessment plans to be in place by the end of AY 2010-2011 with assessment beginning in AY 2011-2012 at the latest [258]. For example the [Office of Research](#) [271] and the [Graduate Division](#) [19] both have assessment programs in place as of October 2010 [272, 273]. The model policy requires high-level administrators to submit annual reports on their units' assessment activities to SACA [274].

Institutional Assessment Initiatives

Initiating institutional assessment questions and deciding how to address them will be the responsibility of the Administration leadership and the Academic Senate, who will be advised by SACA. Based on its reviews of annual assessment and program/periodic review reports, SACA itself will propose questions in its annual report [45], and both SACA and the Director of Assessment will make other recommendations as needed. Recommendations will identify the sources of evidence that will inform this process. The recommendations from SACA will be presented at least annually in its required report, but may be presented more frequently if needed. Since [SACA's membership](#) [257] is drawn broadly from many university constituencies, it will be able to respond to a variety of needs as they become visible.

Staff Support for Annual and Periodic Assessment

Responding to what we have learned to date about assessment, SACA believes that sustainable assessment requires expert support for faculty and staff who are trying to develop assessable outcomes using authentic student work. SACA also believes that it needs expertise to support its own role in integrating assessment data across the institution. Thus, SACA's May 2010 recommendations to the EVC/Provost [44] included: (1) establish a new position of Director of Assessment, reporting directly to the EVC/Provost; (2) provide high-level assessment support at the local level, in each school, i.e., a staff

person with expertise in assessment; (3) add staff to IPA and the Academic Senate office to support annual and periodic assessment,⁴⁶ and (4) establish a contingency fund for unanticipated assessment needs in the upcoming year. During 2010-2011, SACA will review the implementation and effectiveness of these recommendations and make longer-term recommendations. However, even this first set of recommendations establishes a core of assessment expertise spanning the campus, with the Director of Assessment responsible for coordinating the activities of these staff and the assessment efforts they support.

Given this infrastructure and resourcing for assessment across the campus, we envision our assessment processes to be sustainable for at least the next seven years if we are able to address the following challenges.

1) Ensure that assessment of interdisciplinary graduate programs, which can span schools, is supported. The graduate groups and graduate emphasis areas at UC Merced commonly require course work delivered by multiple academic programs in the institution. Each graduate group *does* have a primary dean assigned [275], who, working with the Dean of the Graduate Division, can facilitate the assessment of these programs, but SACA's formative feedback may prove especially useful in these cases. SACA is sensitive to the possibility that undergraduate and graduate assessment will be different enough to require different kinds of feedback and, perhaps, different kinds of assessment support. SACA will evaluate this possibility over the next five years and make recommendations according to its findings. If there are future cross-school undergraduate majors or minors (currently there are none, although some majors and minors draw on courses from more than one school), then a similar issue will arise.

2) Staff workload management. On the academic side, the submission of multiple annual reports will stress the limits of available staff support. To help distribute the work, beginning in AY 2011-12, each program will submit its report during one of two reporting periods, one each semester. Programs were asked to select their preferred deadline according to the logic of their assessment planning and how they organize workload [276]. SACA believes, on the basis of the kinds of assessments programs use, that about half of all reports will come in during each period. If the workload does not distribute evenly, then deans and FAOs will negotiate the best balance. On the administrative side, units that are already modestly staffed may find assessment yet another under-resourced obligation. SACA will monitor this, making recommendations as necessary.

3) Faculty workload management. Although the FAO system has been a success, it requires intensive and extensive time for the FAOs [259]. SACA has contacted Deans to request an updated list of FAOs, and will do so annually, noting that FAOs will need to be replaced periodically [277]. Program Review also requires much faculty time, both on the part of faculty in programs undergoing review and in staffing program review committees. Diffused responsibility is congruent with our administrative structure, in which personnel groups do not necessarily overlap with academic programs. While encouraging interdisciplinary communication in our research, this structure may lead to duplication of administrative effort. During 2010-2011, SACA will continue to monitor faculty workload issues regarding both annual assessment and periodic review and make further recommendations on this issue.

4) Resources. SACA has recommended initial resources to support assessment [44]. The campus will have to make a concerted effort to sustain the level of resourcing appropriate to campus growth, and the participation of the deans in making resource requests will be critical.

5) Accountability of the Assessment Process. SACA itself will make its first annual report in January 2011, a year after its formation. This report will be provided to the Administration and Senate and shared with the entire campus [45]. Annual reports will be filed thereafter. The report will include a summary of

⁴⁶ As of the end of September 2010, all of these recommendations have been approved.

meeting minutes, and summaries of the results of program and institutional assessment initiatives. SACA will also initiate development of a campus policy for sharing assessment results publicly that considers the diverse forms of assessment being undertaken and the tensions between accountability and keeping assessment formative and improvement-oriented. UC Merced participates in the [University of California Accountability Framework](#) [278]. While this includes much data, it does not include assessment of authentic student work as a measure of educational outcomes. The [UEETF report](#) [47] recommended that campuses publish programmatic learning outcome reports on an annual basis, but the Academic Senate [did not endorse this proposal](#) [48], and UCOP has been seeking an alternative framework for programmatic accountability. The wide range of assessment instruments and approaches used at the programmatic level would render it difficult to present such information to the public “in an easily understandable form.”⁴⁷ This year SACA will begin a dialogue with both UCOP and the UC Academic Senate about accountability standards and publication of accountability data. To initiate this process, SACA will, by the end of AY 2010-11, write to the systemwide UC Academic Senate Chair requesting clarification of UC expectations.

B. Integrative Learning for the Institution and for the Students (CFR 1.1, 1.2, 1.3, 1.5, 2.2a, 2.3, 2.4, 2.5, 2.6, 2.7, 2.10, 2.11, 2.13, 3.4, 3.8, 3.11, 4.1, 4.3, 4.4, 4.5, 4.6, 4.7)

At this late point in the Initial Accreditation process, we have learned, above all, how difficult it is to build a new research university that responds to contemporary goals and priorities,⁴⁸ but we are proud of our accomplishments to date. After the CPR visit, our Visiting Team, using the [Educational Effectiveness Framework](#) [279], gave us high marks in many [categories](#) [3, p.49] and commented on how far we had come in short order. Using this framework now to measure what we have learned in the past year [280], we find ourselves for the most part agreeing with the Visiting Team’s earlier evaluation, but our understanding of what the scores mean has deepened. In some cases, that deeper understanding leads us to re-evaluate our scores. For example, under “Learning” point B, “Expectations are Established,” we would revise our score down from “Highly Developed” to “Developed” [280]. We do not think expectations for student learning are as widely known and embraced as they need to be for us to be in the highly developed category. Given how quickly we are [growing](#) [61], it will take us time every year to bring new faculty—both Senate and non-Senate—up to the highest level. Similarly, under Teaching/Learning Environment, we better understand what is required in the “Professional Development, Rewards” category and in retrospect would have rated ourselves at “Developed” rather than “Highly Developed,” for the simple reason that we discovered that we needed more support for annual assessment of learning outcomes. We are now, however, hiring additional support staff [44] and have thus earned the higher score [280]. Our third revision is to a higher level. Under the “Organizational Learning” category, we feel we have improved in sub-point C, “Performance Data, Evidence, and Analyses.” We have developed better and deeper data sets; we collect data systematically; access is good; it is usually disaggregated, and it is “usually considered by decision-making bodies at all levels.” Thus, we would rate ourselves as “Developed,” or at least on the boundary between “Emerging” and “Developed” [280]. In the final analysis, we believe, the institution can best be described as “Developed” in its “Mostly well-established commitment to educational effectiveness” [280].

As useful as the WASC rubric is in helping us evaluate our commitment to and performance in educational effectiveness, there is another rubric, namely the AAC&U/Carnegie [Integrative Learning](#)

⁴⁷ WASC Task Force on Transparency & Accountability, “[Student Achievement at the Institutional and Degree Level: Guidance on Disclosing Data to External Audiences](#),” (2009), p. 5.

⁴⁸ Did the founding faculty of Harvard College have the same sense of awe confronting such a formidable task? We hope that our heirs centuries hence will appreciate what we have accomplished on their behalf.

[VALUE Rubric](#), [281] that we might wish to use in the future precisely because it may help us refocus on one of UC Merced's earliest visions. In 2003, UC Merced's founding faculty and administrators agreed to develop an undergraduate experience that stressed integrative learning, which the AAC&U describes as "an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus." Our founders crafted a small number of interdisciplinary undergraduate majors and graduate programs and built [undergraduate general education around eight guiding principles, to be developed in every major](#) [282]. Most ambitiously, they devised two common courses: CORE 1 [283] for incoming freshmen and CORE 100 [284] for first semester juniors. The idea was to have students see how complex, real problems can best be addressed by combining the insights and techniques of multiple disciplines.

The faculty retain the [vision](#) [5, p.33], as we saw in our strategic academic planning exercises in 2007-2008. The faculty, despite the difficulties encountered in the first two years of operation, again endorsed the eight guiding principles of general education and integrative learning as part of their commitment to giving students a liberal education.⁴⁹ Clearly UCM's emphasis on problem solving, especially on helping to solve some of the [problems](#) [5, p.18] plaguing the Central Valley, shows that faculty are not envisioning liberal and career education as separate, but there is also no doubt that faculty do not feel it is in the best interests of students to train narrowly for currently available jobs. Instead, they feel that a liberal education, with its emphasis on life-long inquiry, critical thinking, and problem solving, will give our students the best basis for productive and satisfying careers that change with—or even prompt—larger changes in the world.

While faculty retain the vision, they have been required to make significant changes in the face of significant impediments:

- The university was divided into [three schools](#) [184] before any faculty were hired. Since hiring and budgeting are primarily school based, Balkanizing forces were at work before the faculty began building curricula.
- The university's entire history has been plagued by a series of severe budget crises. At the outset, promised state funding did not materialize because the state entered a budget crisis that we now see as premonitory. The subsequent international financial crisis has had an even more profoundly negative impact on state support for higher education, and while UC Merced has been protected from cuts, it has not been allowed to grow as quickly as planned. Making a virtue of necessity, UC Merced has become nimble at making the most out of slender resources, but the impact on integration has been substantial. On the administrative side, employees have had too little time for the reflective practices that connect all work to common goals. On the curricular side, we have been unable to maintain the full vision of our general education program.
- Our campus enrolls a majority of [first generation students](#) [166]. Most such students, as we know from decades of [Cooperative Institutional Research Program](#) (CIRP) [285] research into the motivations and expectations of college freshmen, at first see college as providing training for particular careers. As

⁴⁹ While they did not use the term "integrative learning" in articulating their vision, they described the educational mission as pulling students into a "community of inquiry." Moreover, the assessment data we present in the Educational Effectiveness section show that most faculty groups chose quite intentionally to assess PLOs that reflect the "big picture," i.e., that reveal the degree to which students are able to integrate what they have learned in order to solve complex problems.

such, they gravitate toward known majors as established paths to established jobs. We found early on that our interdisciplinary majors were not attracting students. We therefore established more traditional majors ([CPR Report](#), p.3 [4]), and as we built the physical plant, co-curricular programs, etc., and came to look more like a conventional university, our [enrollments](#) [286] have risen. One consequence, however, is that faculty have devoted much attention in the past four years to building these [conventional majors](#) [184]. While our Assessment Plans [32] show that these majors align well with our general educational goals [36], intentional integration flags in the face of the disciplining effect of conventional disciplines.

The combined impact has undercut the advantage of our being new: we have had to adopt heritage practices that, typical in American higher education, put us in the typical position of struggling with integration between curriculum, co-curriculum, and administration.

The entire accreditation process has brought these concerns to the fore, and we have already implemented and have begun to plan many corrections to encourage integrative learning and further to align administrative and co-curricular units around institutional mission. While we have documented these changes throughout this report and in our appendices, we wish to emphasize five responses here:

1) The most important effort UC Merced has made to institutionalize integration is to establish the [Senate Administration Council on Assessment](#) (SACA) [42]. This committee is [charged](#) [43] to collect and review assessment data from across the campus, to select particular institutional questions in order to guide assessment, and to report findings to both the Senate and the Administration. In short, this standing committee has begun to assume some of the functions of the *ad hoc* [Accreditation Steering Committee](#) [41], ensuring that data are collected, analyzed, and disseminated across the university. In its first year of operation, SACA has made explicit recommendations about funding support for curricular and co-curricular assessment [44]. It has also drafted guidelines for assessing administrative functions [7] in accordance with WASC principles and in rough parallel to curricular assessment, with reviews broken down into annual assessment and periodic program review. The idea is to move administrative review from focusing primarily on the performance of personnel to reviewing how well units articulate goals that are aligned with mission and how well outcomes are assessed against those goals. SACA is, we wish to emphasize, essentially serving two important and related functions: 1) to audit and improve assessment and 2) to develop institutional questions that can help the institution as a whole use assessment data. As described in Part A of this Essay, in its first year of operation, SACA has worked more on the audit function, developing infrastructure by recommending policies, procedures, staffing, and scheduling. SACA has set near-term and intermediate goals to develop useful ways to collect and store assessment data, to take over from the Steering Committee the capacity to give constructive feedback on the quality of assessment, and to monitor the resources needed to sustain assessment. Regarding the development of institutional questions, SACA plans to develop its first recommendations for institutional questions in its second year of operation.

2) We have created the role of [Faculty Assessment Organizer](#) (FAO) [29] for each academic program and have established reporting cycles [276]. We crafted the process [40, 269] to emphasize formative evaluation: feedback is program-based, with information useable for budgeting and personnel actions, but the primary emphasis is for programs to engage in regular reflection on student success and what curricular and pedagogical changes might encourage student success. In response to increasing experience with assessment, FAOs will continue to refine program assessment plans. Over the next three years FAOs, faculty, and deans, with input from SACA, will develop plans for rotating the FAO position and for accounting for the role as part of faculty workload.

3) We have developed Program Review for all Academic [148, 121], co-curricular [123] and administrative programs and units [8] that incorporates and builds on Annual Assessment. Program Review necessarily involves a summative element, though our revised undergraduate policy attempts to

maximize the formative impact. Our intention is to make the process creative rather than defensive. The Undergraduate Council will revisit undergraduate program review annually to fine-tune the process, and will document its progress in its [annual report](#) [268]. The Graduate and Research Council in the near term will continue to focus on CCGA and WASC Substantive Change Review as the main program review process⁵⁰, while also organizing program review for those graduate groups that have yet to develop CCGA proposals [124]. Student Affairs will continue to refine its Program Review process. Administrative units will initiate periodic review in the academic coming year [258].

4) We have established a General Education Subcommittee of the Undergraduate Council [288] and have created the office of [Vice-Provost for Undergraduate Education](#) [289]. Together, this Senate body and administrative unit mirror the faculty/school structures by which other academic programs are assessed, reviewed, and budgeted, ensuring that GE is not cut off from normal, regular, and robust oversight. We will continue annual assessment of the CORE courses [35]; over the next year, we will agree to a revised CORE 100 course [290], and will then begin to develop a GE assessment plan.

5) We have developed a “[First-Year Experience](#)” [231] initiative, led by Student Affairs but with the collaboration of faculty (see Essay IV, Part E), to help our students make the transition to the university, including learning how to envision an education as a whole. Student Affairs will begin assessing the entire initiative, as well as the programs participating in the initiative, next year. Student Affairs will also begin to develop a retention initiative for sophomores [118].

The effectiveness of the first three of these actions is reflected above, in the Sustainability, Educational Effectiveness, and Program Review sections of this report respectively. In each case, the reports show that our responses are working and our benchmarks for future performance will ensure that these groups and policies become part of the normal structure and functioning of the university. Our efforts to address General Education [290] and to help students with the transition to the university speak profoundly to two major difficulties: 1) breaking down institutional silos so that the institution focuses on integrative learning, and (2) figuring out how to assess integrative learning.

As mentioned in the Introduction to this report, we have adopted a decentralized approach to assessing program learning outcomes. We identified, both in adopting this approach and in our analysis of educational effectiveness as revealed by discipline-based assessment, both the strengths and weaknesses of de-centralized assessment, but it is important for us to address the weaknesses if we are to be true to our educational vision. Beyond doubt, it is difficult to help students integrate disciplinary work into a larger education, but our approach to general education, with a core curriculum to guide students, with [general principles](#) [37] widely shared, and with programs mapping their disciplinary principles onto the guiding principles of general education [36, 38], should give us much evidence of integrative learning. We do not yet have any systematic way to use this information, but our review here suggests that we may be better able to measure integration than we expected.

Assessment of integrative learning begins in CORE 1, where we try to introduce students to integrative problem-solving. We robustly assess CORE 1, and that assessment this past year included a focused analysis of integrative learning. As the FAO puts it in the Assessment Report [35]:

The course’s chief concern is to get students to make connections among academic disciplines. As its syllabus states, ‘the course capitalizes on an interdisciplinary approach ... to demonstrate, through examples, that complex questions are best understood not from a single, decoupled perspective, but by insights gained from different—even seemingly disparate—approaches.’ Such exploration and synthesis of different perspectives is also fundamental to the work of academic writing, as the Writing Program teaches it. Hence it seemed natural for us to begin our assessment

⁵⁰ With clear implications for the educational effectiveness of these programs [287].

efforts by investigating the Core 1 Cumulative Essay, a comprehensive course capstone in which students apply their understanding of academic argument (and its attendant rhetorical strategies) to surveying the course as they have experienced it, tying together often disparate subjects and concepts to demonstrate ways in which a range of academic disciplines contribute to common scholarly concerns.

While the report notes that the data contains a great deal of “noise” having to do with inter-rater reliability, scores show students attaining a low “C” level in synthetic and analytical thinking. CORE 1 faculty are responding vigorously, intending simultaneously to improve students’ synthetic thinking and to help students understand the value of synthetic thinking. The idea is that the course should provide a blueprint for further education, that it should foster a level of productive frustration and curiosity along with an understanding of the value of not having all the answers in short order.

As for the other half of the required GE sequence, CORE 100, we have yet to decide even how to deliver the course in a sustainable way [290]. Ideally, this course would give us a perfect location to assess progress in having students attain an integrative outlook toward learning. Instead, having provided a collection of alternative courses [290], most offered as writing-in-the-disciplines courses, we fall short of the ideal. Many of the substitute courses have assessed student achievement in “Scientific Literacy” and others in communication skills. This material [291] is being used formatively on an *ad hoc* basis. For instance, the faculty of WRI 116 [292], “Writing in the Natural Sciences,” have consulted widely about their results. As reported in the minutes of 12/3/09 meeting [293], “[Jay Sharping](#) [294] and [Kevin Mitchell](#) [295] (both Senate faculty in physics) shared . . . their thoughts about student need. Basically students need more practice with problem-solution writing. Ideally, their prose would be ‘short, concise, clear’ providing a ‘logical explanation of a physical phenomenon.’” Among the actions taken, in consultation with School of Natural Sciences faculty [David Ardell](#) [296], [Mike Dawson](#) [297], and Carrie Menke, the WRI 116 faculty asked the library to create a [portal page](#) [298] for WRI 116 courses, summarizing scientific research resources and strategies. But even though local circles are being closed, we have yet to aggregate and analyze the data to look at the institution-wide impact of CORE 100 on student learning. Lacking such evidence at this point, we have looked at some other indirect indicators.

Our Educational Effectiveness analysis suggests that our students struggle with integrative learning beyond CORE 1. We have mapped the alignment of PLOs with the eight guiding principles [36], but we have yet to do any meta-analysis of the correlations between PLO assessment and GE outcomes [299]. In fact, most of our analysis to date depends on three sources of indirect evidence: 1) a study correlating UCUES exit survey questions with our eight guiding principles, (2) material from various Student Affairs surveys and reflective exercises, and (3) material from various surveys and reflective writing assignments in various courses.⁵¹

1) UCUES Study: For this review, knowing that we had little direct evidence of student achievement in General Education but having just given the UCUES survey to seniors, we wondered if the student survey responses could help us evaluate General Education outcomes. Thus, we mapped 2010 UCUES questionnaire items onto the eight guiding principles, then examined correlations between those measures and grades earned in CORE 1 and cumulative GPA during the senior year, and then identified statistically significant differences, if any, between males and females, STEM/non-STEM majors, Pell grant status, etc. Because the correlations between self-reported academic achievement in eight particular dimensions and grades earned are either not significant or negative, this study [300] can only identify

⁵¹ Other direct and indirect evidence of learning structured by the Eight Guiding Principles is in the pipeline or in planning, especially including assessments of Service Learning, of the McNair Scholars Program, of undergraduate research, of success workshops, of summer bridge, of SNRI summer research internships, and of programs offered by the Division of Student Affairs.

populations who were better or worse served (according to the self-reported measures of academic achievement). Males and females and native and non-native English speakers appear to be equally well served, but on some measures, students who were Pell Eligible, First Generation, or STEM majors fared differently than those who were not. First Generation, Pell Eligible, and STEM majors reported higher scientific literacy gains than students who were not. Pell Eligible students also reported higher communication gains than non-Pell Eligible students. STEM majors reported lower communication strengths and lower self and society gains than non-STEM majors. Given that our first classes were weighted toward [STEM majors](#) [286], given that our study finds lower self-reported communication strengths for STEM majors [300], and given that negative correlations in writing for STEM majors are reported in other studies,⁵² this association may be valid. We certainly will address it in future assessment of General Education, as well as in the assessment of other programs.⁵³ What this kind of study cannot even intimate, however, is whether our students see themselves as having made any progress in integrating learning across the curriculum, the co-curriculum, and beyond.

2) Evidence from Student Affairs: Student Affairs programs provide some of the best indirect evidence of university-wide outcomes in General Education precisely because Student Affairs programs focus on some of the broadest of the integrative outcomes, such as “Decision-making,” “Ethics & Responsibility,” “Leadership and Teamwork,” and “Development of Personal Potential” [38]. Each of these develops in both the curriculum and co-curriculum; each is very difficult to measure directly. Self-reflection and holistic observation are two very useful ways to assess performance. Many Student Affairs programs collect indirect evidence of outcomes in these areas, looking at outcomes in the many student success efforts as well as in leadership and service learning activities. To look at the success efforts first, USTU 10 [236], a course for students either at high academic risk or who are already struggling, collects reflective comments regularly [301], and most of these describe how much students have learned about the educational process, including what motivates them and what barriers they face, as well as how to make good decisions to play to personal strengths and to compensate for weaknesses. Four examples reveal both the patterns and the impact [301]:

- “Enrolling in USTU 010 has really helped me understand why I wasn't succeeding to the best of my abilities. It opened my eyes to things I wasn't doing or things that didn't need to be done and it changed my life. . . . USTU helped me gain the "soft" skills I needed in order to raise my grades as well as my spirits. USTU got me through my freshman year.”
- “I am glad that I enrolled in USTU because it has shown me that there are multiple ways to be a successful student. . . . This class has also showed me how to change from having a negative attitude to a positive one and that really affects how I work academically.”
- “[A]fter my first semester of being a failure, I realized that I had doubts and the lack of self confidence. . . . USTU has helped me realize and locate my weaknesses and where I need to improve. The course did not show me the answers to my problems, but it did guide me to the right path in seeking them.”
- “I am glad I enrolled in this class because it helped me understand the reasons why I can do well in school. The book gave some reasons like stories of other people in my similar situation that had success. The book pretty much explained success being self-motivation, wise choices,

⁵² Thomson, G. and J.A. Douglass. 2009. [Decoding learning gains: Measuring student outcomes and the pivotal role of the major and student background](#). Research and Occasional Paper Series: CHSE.5.09.

⁵³ 22 of 26 (85%) majors and stand alone minors have at least one program learning outcome that explicitly addresses communication as of fall semester 2010.

interdependence. I learned that it's not just showing up and doing work only, it's really applying all aspects of yourself to reach success.”

Ideally, this kind of self-knowledge comes through success in the classroom, and it is reflected in such things as post-baccalaureate employment and graduate-school enrollments. But for students who lack the familial and cultural support that makes such growth easy, we offer guided support that, by the students' own accounts, works.

Student Affairs also can indirectly document the success of higher-achieving students in reaching many of the same General Education goals, especially in providing opportunities to develop teamwork and leadership. Reflective comments by students in leadership positions [302] mention how their experiences at UC Merced helped these students to develop confidence, organizational skills, and the ability to apply classroom experience in other contexts. As one student puts it

One program I took part in was the Science and Math Initiative. This program allowed me to learn about teaching strategies and then apply them working in elementary schools classrooms for three hours each week. This allowed me to understand the joys and challenges of teaching and ultimately led me to choose to apply for teacher credentialing programs. I feel that I am a much more confident leader than I was when I started here.

Perhaps the most striking recent example is the success UC Merced had in sending a team to the [Latino Leadership Institute](#) [303] at Harvard's Kennedy School in June, 2010, “for a weeklong program that . . . include[d] classes on public speaking, teamwork, negotiation and public narrative, as well as sessions designed to help students develop greater self-awareness.” Merced's team of six had to be well prepared in order even to be selected as part of the group of 28 students “whose leadership potential has already been recognized by their local communities.” As Andy Zelleke, Faculty Chair of the Initiative, put it, “My colleagues and I were deeply impressed by the six rising seniors who attended from Merced—they are unusually poised and talented emerging leaders who are committed to making an important difference in their communities. It's a privilege for us to be able to work with these extraordinary young people.” [304] We believe that their preparation at UC Merced helped them to develop their poise and talent.

3) Indirect evidence from courses and academic programs: We have collected much course- and program-based evidence of student learning, much of it summative. In the Program Review for the Applied Math Program, for example, the review team interviewed Applied Math majors, finding [135] that they had a strong grasp of the program as a whole, strong enough, indeed, to make insightful suggestions for improvement: “The AMS undergraduate majors are found to be generally very happy with their program. . . . They reported they found AMS courses to be useful with the lower division courses providing a good foundation for the upper division courses. . . . The AMS students expressed a strong desire for a greater variety of upper division AMS courses. . . . Additionally, they stated that they thought that in some cases, core AMS courses were offered too infrequently, making it . . . somewhat difficult to maintain the continuity of their learning advanced applied mathematics.” Students offered these criticisms in part because they wanted more connection with professors who help them integrate their knowledge. Students “observed that each AMS student has a good working relationship with at least one AMS professor.” One tangible and suggestive outcome of such high *esprit de corps* among the majors and strong mentoring relationships between faculty and students is that

The AMS program has an outstanding record of undergraduate student scholarship. The number of peer-reviewed publications that involve undergraduates substantively is exceptional for American mathematics or applied mathematics programs. Generally, it is difficult for undergraduate students to perform research in mathematics due to the large body of basic

knowledge that is typically required for students to become sufficiently proficient to perform research-level contributions. [135]

Clearly, the review team found both that the program provided opportunities for integrative learning and that students are taking advantage of those opportunities. The large number of students in other [programs](#) [305] who are also publishing at a high level indicates that Applied Math students are not alone in working on significant integrative projects.

To take another example, one of two assignments in the Literature and Culture major's capstone course, "LIT 190: Senior Project," is an essay requiring students to reflect on their undergraduate education and the role their major played in that education [306]. Essays collected in 2010 suggest that our curriculum is, in fact, helping students not only to develop specific skills, but also to integrate all aspects of their education [306]. In reflecting on their undergraduate experience, most Literature students speak about how their education is integrative, albeit in very different ways. Many speak to the integration of their values and knowledge; several speak to the value of interdisciplinary thinking [306]. Most ambitiously, one [307] speaks to the ways in which literary art incorporates other fields of knowledge at the same time it enacts a humanity that could be defined, perhaps, as a productive blend of the traditionally opposed ideas of *Homo faber* and *Homo ludens*:

Speaking of Benjamin Franklin, there's a benefit to one's sense of history to be had from an education in literature as well. Not to mention one's sense of psychology, philosophy and the sciences. Better, perhaps, to say that one partakes in studying all of . . . humanit[y] when one studies any of the humanities. Nevertheless no subject is as gregarious as literature . . . I have studied environmental literature, which incorporates biology and theories of ecology. I have read a Thomas Pynchon short story about entropy. I have read the autobiography of the slave *cum* free man Frederic Douglass and the letters of Dr. Martin Luther King. I learned more about the state of California, where I have lived all my life, in a literature class than I had ever previously learned. In a class about Greek and Roman mythology I learned a great deal about humanity and art. And that's what is really important to keep in mind when considering the value of my education. What is it really all about? It's about studying art; a certain kind of art in particular, but . . . the same techniques of study and analysis learned in studying literature can be used elsewhere. Art is what humans do. That's all there really is, whether it's baking bread or making a wind-mill out of a bicycle (some art is functional). If all of the world's problems were solved tomorrow, or if a global catastrophe were to destroy civilization as we know it, we would still be making art the next day, and the day after that. So in studying literature, I'm studying and interpreting the value of what humans produce, and in turn what I produce and the myriad connections in between.

The Literature faculty looked at these essays qualitatively rather than against any rubric, noting that most students connected their reading of literature with the development of analytic, aesthetic, and ethical skills that they used foremost for personal development but that they also expected to use in their careers.⁵⁴ While many did not address career goals, of those who did, most envisioned using the skills and knowledge they developed as undergraduates to help improve the world in specific ways, mostly having to do with promoting social justice.

Finally, a good source of indirect evidence for integrative learning comes from short reflective introductions to parts of the portfolios submitted in a collection of Writing Courses, WRI 101 and 116-

⁵⁴ Incidentally, the Literature and Cultures PLO Report [35] notes a widespread sense among students of anxiety about the quality of their writing or of their legitimacy to enact adult roles in the "real world." This may in part explain the low reports of abilities in the UCUES survey. Our students enter UC Merced with unrealistic self-appraisals (see BCSSE data, questions 17 and 21, see "Freqs" worksheet) [207]. Their experiences here give them a better sense of real-world standards. If, as Plato has Socrates say in "The Apology," consciousness of one's ignorance is a part of wisdom . . .

119 [308]. These courses are to some degree the bookend for the CORE 1 assessment in that they currently substitute for the CORE 100 requirement [290]. As such, the assignments speak to many of our [Eight Guiding Principles of General Education](#) [37] and to integrative learning. As explained in the [portfolio assignment for WRI 101](#) [309], the course “is designed to promote your growth and development as a writer and researcher in . . . psychology. The overarching learning outcomes of this course include becoming literate in . . . psychology . . . , communicating effectively with multiple audiences, collaborating effectively with others, developing . . . professional ethics, and growing personally and professionally.” Thus, we see a strong integrative component, asking students not only to master disciplinary norms, but also to communicate with non-disciplinary audiences and to reflect on how disciplinary learning affects the learner in multiple dimensions. One student’s [reflective essay](#) [310] introducing her portfolio speaks to this integration not only at present, but also projected into the future:

The Personal Statement demanded of me a certain level of looking into the future and creating long term goals that were not there before. It made me think about the future and what I wanted in life. The Resume portion taught me that I needed more experience with my respective field if I were to ever advance to a higher level.

This kind of self-reflective activity is an essential part of our general education principles, with special reference to that hardest principle of all to turn into a measurable outcome, “[Development of Personal Potential](#)” [37].

The AAC&U [Integrative Learning VALUE Rubric](#) [281] gives us a tool to make sense of some of this varied material. Evaluated by this rubric, most of the literature essays [306] would score at 3 or 4 (on the four-point scale) in each of the five categories. Most of the reflective comments from the freshman students enrolled in USTU 10 [301] would rate 2 (appropriate for freshmen and sophomores) in the rubric’s third category, “Transfer: Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations,” and 3 (high for freshmen) in the fifth category, “Reflection and Self-Assessment: Envisions a future self (and possibly makes plans that build on past experiences) that have occurred across multiple and diverse contexts.” WRI 101 also could be scored on the rubric; the [essay](#) [310] from which we quote above is too short to allow careful categorization, but aligns reasonably well with a “4” in the fifth category. Undergraduate research projects that result in publication probably would score high, too, though it would be important first to identify the work the students actually contributed to the publications. These hints, then, are as encouraging as the UCUES study is discouraging. If nothing else, our study of educational effectiveness has both helped us to identify an educational outcome that we need to address and also to see that we have much evidence to help us improve this educational outcome. It will be helpful to use programmatic alignment with the eight guiding principles [36, 38, 299] to identify where we might find more useful data across the curriculum and co-curriculum. Given that such evidence is readily and appropriately measurable against a national norm, we will discuss whether a GE assessment plan should use the “VALUE Rubric,” whether we should use some other readily available instrument, or whether we should create our own. Regardless, to be true to our educational mission, the Vice Provost for Undergraduate Education and the GE Subcommittee of Undergraduate Council will need to find, assemble and evaluate a variety of data to answer the questions, “How well are our students putting the pieces together?” and “How well are our students, coming in with narrow career goals, developing deeper and broader understandings of what education is and can do for them?” These are the perennial questions in education, and we do not expect to answer them definitively, but we will over the next three years decide what evidence to collect and how to assess that evidence as part of our ongoing effort to create a truly Twenty First-Century education.