# UC Santa Cruz


# Institutional Report


# 2015

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## Frequently Used Acronyms

**APM – The Academic Personnel Manual** Policies and procedures issued by the Provost and Executive Vice President of Academic Affairs of the University of California. All academic appointees at any campus are subject to these policies and procedures, including appointment and promotion, recruitment, salary administration and benefits and privileges.

**CP/EVC - Campus Provost/Executive Vice Chancellor** Responsible for managing the daily campus operations, working closely with the Chancellor, and is the administration's primary liaison with the faculty senate.

**IRAPS – The Office of Institutional Research, Assessment, and Policy Studies** The primary office for the collection and analysis of statistical information regarding students, faculty, and staff, and support for learning assessment.

**UC - University of California** A part of the state's three system public higher education plan, which also includes the California State University system and the California Community College system, it is comprised of ten campuses, of which UC Santa Cruz is one.

**UCUES - University of California Undergraduate Experience Survey** The University of California solicits student opinions on a broad range of undergraduate students' academic and co-curricular experiences, including self-assessment of knowledge and skills.

**VPAA - Vice Provost for Academic Affairs** Responsible for campus academic administration, including coordination and implementation of campus academic planning, review of academic programs, resource allocation, and academic personnel processes. The VPAA is also the Accreditation Liaison Officer for UC Santa Cruz.

# ESSAY 1.  Introduction: Institutional Context; Response to Previous Commission Actions

## Overview

*"We will do important things together as we build upon UC Santa Cruz's legacy of achievement and excellence.  We will do important things together as we continue, even accelerate, our upward trajectory.  We will do important things together as UC Santa Cruz strives to serve California as a top-ranked research university and the leading institution for the education of students.  A place that fosters a culture of excellence, inquiry, creativity, diversity, and public service while developing solutions to the world's most critical challenges.*" (Chancellor Blumenthal, speaking to the campus, September 24, 2007)

This is an ambitious agenda but decidedly achievable. UC Santa Cruz was built on a tradition of innovation and a vision of what a great research university could be.  The success of campus is already well expressed through the impact of our research, the influence of excellent teaching, and the societal benefits that accrue from the service of our students, faculty, staff, and alumni.

The following essays demonstrate how the campus community engages to plan, act, and assess in pursuit of our mission, vision, and goals.  We also reflect on our strengths and weaknesses, our successes and challenges, and the values that help define what we do and how we do it. This engagement translates into compliance with WASC core commitments and standards of accreditation.

*Essay 1 (Introduction)*:  This introductory essay offers a brief history and overview of the campus and provides an overview of the campus's response to previous Commission recommendations.

*Essay 2 (Compliance with WASC Standards and Federal Regulations)*: This essay systematically discusses campus policies, practices, and plans applicable to each of WASC's standards and CFRs.

*Essay 3-4 (Degree Programs and Educational Quality)*:  This essay combines two of the WASC essay topics. First, we describe how the educational characteristics and learning outcomes of UC Santa Cruz's student experience together define the meaning, quality, and integrity of degrees. Second, we detail the campus's processes to ensure educational quality including defining and assessing learning outcomes for all programs and demonstrating students' mastery of core competencies.

*Essay 5 (Student Success)*:  Key student metrics provide the foundation for a discussion of student success and the campus units that play a role in assuring that success.

*Essay 6 (Quality Assurance and Improvement)*: Continuous improvement and quality assurance efforts include on-going processes to assess student learning, review academic programs, and use data to guide discussion and inform decisions.

*Essay 7 (Sustainability)*:  This essay discusses the campus's capacity to monitor and respond to key planning issues and challenges that impact our ability to achieve planned growth and development and to adapt to an evolving external environment.

*Essay 8 (Conclusion)*:  This reflection of what we have learned during this WASC assessment and self-study describes plans for self-improvement going forward.

We believe our self-study demonstrates that UC Santa Cruz has strong academic programs, an outstanding and diverse faculty, and undergraduate and graduate programs that prepare students for the 21st century; despite the challenges of California's fiscal environment, UC Santa Cruz is strong.

## Institutional context

Founded and first accredited in 1965, UC Santa Cruz has established a distinctive role within the University of California (UC) as a major research university that provides a transformational living-and-learning experience for its undergraduate and graduate students and whose cutting-edge research impact is recognized worldwide. (CFR 1.1)

Since the 2005 Commission action, the campus student body profile has increased in quality, size and diversity (Figure 1).  The campus has become increasingly popular with enrollment growing to nearly 18,000 in 2014-15 (from about 15,000 in 2005-06) while becoming more selective.  In fall 2005, 76 percent of 21,346 frosh applicants were offered admissions compared with 57 percent of 40,720 applicants in fall 2014.  The incoming fall 2014 class of 4,030 is more diverse in terms of geography (88 percent Californian, 6 percent out-of-state, and 6 percent international), family profile (40 percent were first generation in their family to attend college, 36 percent come from low-income families) and ethnicity (31 percent Hispanic, 32 percent Asian, 30 percent White/non-Hispanic, and 5 percent African-American), with an average GPA of 3.68 and SAT score of 1,684.  In contrast, 53 percent of the fall 2005 class was White.  Community college transfer admissions have also become more selective (70 percent admitted in 2005 *versus* 59 percent in 2014) with the faculty senate revising policies to place greater emphasis on documenting preparation for the intended major while still keeping open multiple avenues to ensure equity for community college students desiring to enroll at UC Santa Cruz.

**Figure 1. Race/Ethnicity of UC Santa Cruz Students.**



2005

2010

2014

- African American or Black
- American Indian/Alaskan Native/ Native Hawaiian/Pacific Islander
- Asian
- Hispanic or Latino
- White
- Two or More/ Unknown/Intl
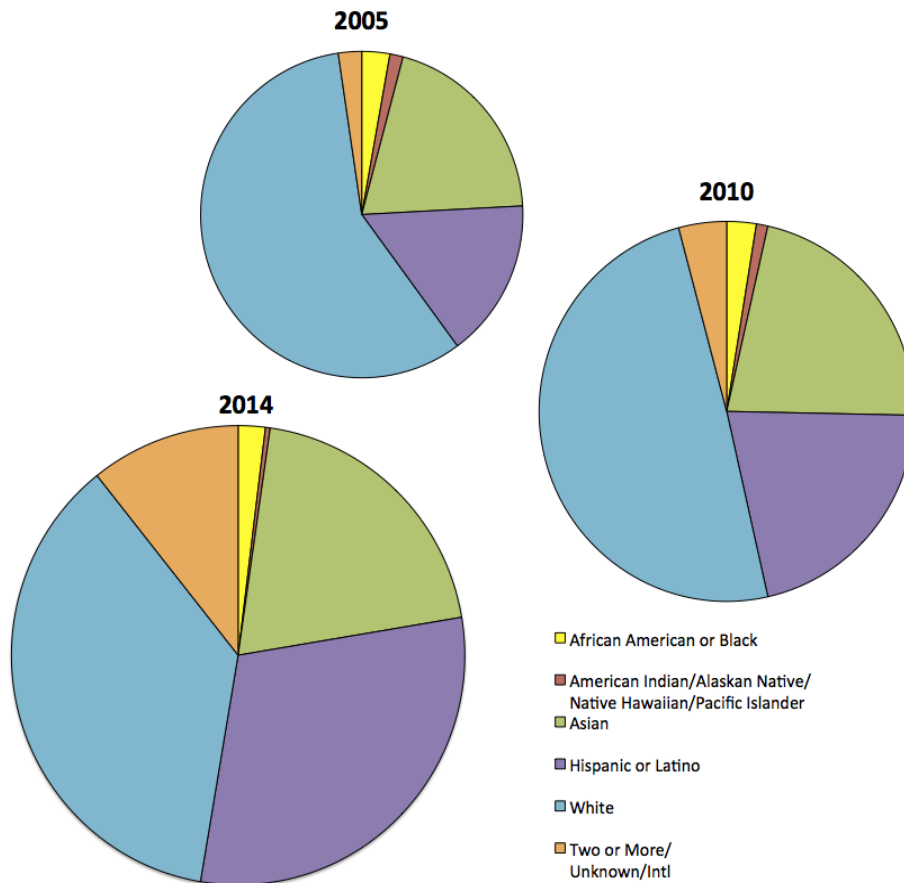
UC Santa Cruz offers academic programs in five academic divisions: Arts, Humanities, Physical & Biological Sciences, Social Sciences, and the Jack Baskin School of Engineering.  The campus offers 57 undergraduate majors, and 25 master's and 33 doctoral programs.

All undergraduate students are affiliated with one of ten residential colleges, whether they live on campus or not.  These colleges divide a larger university into smaller communities, each serving as a social and intellectual gathering place for about 1,500 students, providing academic support, student activities, and intellectual and social events.  First-year undergraduate students take core courses within their colleges that provide a common academic base. UC Santa Cruz combines high quality teaching with opportunities for undergraduates to learn from and participate in faculty research, demonstrating that cutting-edge research and exceptional instruction are mutually reinforcing.

UC Santa Cruz is making a deliberate investment in graduate education at the same time as providing a high quality undergraduate education.  Over the past 15 years, we have more than doubled the number of Ph.D. programs offered and doubled the number of doctoral degrees awarded.  Given its proximity to Silicon Valley, the campus has increased its professional development offerings, including the introduction of new master's programs.  Graduate education supports the research endeavors of faculty, while preparing the next generation of academic leaders and professionals.

In 2014, there were ~2,000 academic employees at UC Santa Cruz, of which ~700 were faculty senate faculty (ladder rank and lecturers with security of employment). Table 1 shows the distribution among instructional faculty. Of senate faculty, 41 percent were women and 27 percent were minorities; 51 percent and 19 percent of the non-Senate lecturers and other teaching titles were women and minorities, respectively (Affirmative Action Plan for Academic Employees). All ladder rank faculty participate in both undergraduate and graduate education.

**Table 1. Size and Shape of Instructional faculty at UC Santa Cruz**
(http://apo.ucsc.edu/advancement/forms/docs/AcademicHeadcount.pdf)

|  |  |  | Totals |
|---|---|---|---|
| Senate Faculty | Ladder Rank | Pre-tenure | 80 |
|  |  | Tenured | 418 |
|  |  | Emeritus | 180 |
|  | Lecturers | Security of Employment | 8 |
|  |  | Emeritus Security of Employment | 9 |
| Non-Senate Faculty | Lecturers |  | 209 |
|  | University Extension |  | 186 |

Our academic programs are located in Santa Cruz at the 2,030-acre main campus and at the Silicon Valley location in Santa Clara (*Silicon Valley Initiatives* & *University Extension)*. Additional locations for research and development include a 98-acre marine science campus in Santa Cruz; the *Monterey Bay Education, Science, and Technology Center* (a regional development site in Monterey); *Lick Observatory* (a UC system-wide research site on Mount Hamilton near San Jose); and parts of the UC Natural Reserve system (including reserves at *Año Nuevo Island, Landels-Hill Big Creek, Fort Ord,* and *Younger Lagoon*).

**The UC context**.  UC was founded in 1868 following a provision in the California State Constitution (1850) requiring the legislature to create a state university.  The State Constitution establishes UC as a public trust to be administered under the authority of an independent governing board, the Regents of the University of California. The UC system has ten campuses: Berkeley, Davis, Irvine, Los Angeles, Merced, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz. Many of our basic values stem from UC's land grant roots and the California Master Plan for Higher Education, including our

commitment to provide access and excellence and to serve as an engine of social mobility for the people of California and for students from other states and countries. (CFR 1.5)

**Faculty shared governance**. The UC system is based on an exceptionally strong model of shared governance between university administration and a faculty senate (Standing Order of the Regents 105.2). UC Santa Cruz's Chancellor is the chief executive officer and the Campus Provost/Executive Vice Chancellor (CP/EVC) is the chief academic officer and chief operating officer. Under the UC system of shared governance, the Chancellor and CP/EVC exercise authority for the allocation of University resources. Among the responsibilities delegated to faculty are establishing curricula at the course and degree levels and establishing admissions criteria. The faculty organize through the faculty senate, which includes all tenured and tenure-track faculty. (CFR 3.10)

As part of shared governance, the faculty plan academic initiatives and consult with the CP/EVC on their development and implementation. Faculty have responsibility for evaluating curricular effectiveness and students' academic progress.  This has occurred most recently through the development of comprehensive multi-year plans for assessment of program learning outcomes (PLOs).

**Institutional values and strategic plans**.  UC Santa Cruz was envisioned as a university that would combine the strengths of a small liberal arts college with the depth and opportunities found only at a major research university.  This integration creates something distinctive in public higher education and the participation of undergraduates in UC's research mission is highly valued at UC Santa Cruz. (CFR 1.1)

The Chancellor has recently reiterated our institutional values as:

- the centrality of research and a research-active faculty,
- the importance of graduate education and its links to undergraduate education,
- a commitment to providing a transformative undergraduate educational experience,
- a culture of social and environmental responsibility, including a focus on sustainability,
- a tradition of innovation in pursuit of solutions to society's critical challenges, and
- an emphasis on diversity, equity, and inclusion, aligned with our campus principles of community.

The campus has just completed a comprehensive, highly collaborative strategic planning process, *Envision UCSC*, which identified specific shared-vision elements and campus-wide goals the campus will pursue as it approaches 2020. (CFR 4.6)

UC Santa Cruz's institutional values are exemplified in two important statements that were collaboratively developed and inform the culture of the campus:

1. The campus mission and vision statement, which sets forth a future built on the campus's values of social and environmental responsibility.

2. The *Principles of Community* that were developed with broad consultation and endorsed by campus leadership in 2001.

Our institutional values are consistent with the UC system-wide *Statement of Ethical Values* (and standards of ethical conduct).

**Process by which the WASC report was prepared**.  Planning for UC Santa Cruz's review began in 2012. The Vice Provost for Academic Affairs (VPAA), who is the campus's accreditation liaison officer (ALO), defined needed preparatory activities, organized staff responsibilities, and prepared a timeline for review by campus leadership and a WASC steering committee (comprised of faculty senate representatives and central administrators). The WASC steering committee provided guidance, input, and both academic and administrative perspective on the report preparation throughout the process.

The faculty senate took particular interest in Essays 3-4 (*degree programs and educational quality*), 6 (*quality assurance and improvement*), and 7 (*sustainability*) and worked with the administration on their preparation, providing advice and feedback on working drafts. The entire institutional report underwent formal faculty senate review during spring 2014 and winter 2015.

**Accreditation history.** UC Santa Cruz has been fully accredited since 1965 and was last reaccredited in 2005. In addition to programs at our main campus, WASC has accredited degree programs at the Silicon Valley location. In its recent response to the campus's 2010 interim report, WASC focused on six topics overviewed in the next section, and these are woven throughout our essays: (CFR 1.8)

| | *Topic …* | *Addressed in …* |
|---|---|---|
| 1. | Planning for growth in graduate education and research while sustaining undergraduate excellence | Essay 7 (*sustainability*) |
| 2. | Considering organizational structures to support planned growth | Essay 7 (*sustainability*) |
| 3. | Integrating general education with the major to ensure a coherent curriculum | Essay 3-4 (*degree programs and educational quality*) |
| 4. | Achieving a diverse campus through targeted recruitment, academic experiences, and better retention | Essay 3-4 (*degree programs and educational quality*), Essay 5 (*student success*), and Essay 7 (*sustainability*) |
| 5. | Understanding and improving retention | Essay 5 (*student success*) |
| 6. | Continuing progress on accountability for student learning | Essay 3-4 (*degree programs and educational quality*) and Essay 6 (*quality assurance and improvement*) |

**Planning for growth in graduate education and research while sustaining undergraduate excellence**. Campus academic planning attempts to find an optimal balance between undergraduate and graduate enrollment growth that serves the campus mission of providing access under the California Master Plan and promotes excellence at both levels. UC Santa Cruz (i) reaffirms its commitment to enhancing undergraduate student experiences through investment in our colleges, experiential learning, and campus life and leadership development; and (ii) is taking the steps needed to deliver on its plan to significantly expand doctoral and master's enrollments.

**Considering organization structures to support planned growth**. The campus continues to hone organizational structures and leadership roles to support planned growth and development. The campus decision in 2005 to separate the administrative roles of the Vice Provost/Dean of Graduate Studies and the Vice Chancellor for Research has better positioned it to achieve its graduate growth and research aspirations. Since our 2010 interim report, a significant realignment of student services administrative and student-support units has streamlined the delivery of services to students and has better aligned student affairs functions with academic priorities.

**Integrating general education with the major to ensure a coherent curriculum**. Since our last reaccreditation, the faculty senate systematically examined general education and revamped the requirements in 2008-09. New requirements were adopted for the fall 2010 entering class. Campus guidelines now encourage faculty to consider how learning in courses required for their major programs may also satisfy the general education goals for their students. This more integrated approach is reflected in the PLOs now published for programs.

**Achieving a diverse campus through targeted recruitment, academic experiences, and better retention**. Consistent with its core values, UC Santa Cruz views diversity in the classroom, research lab, and workplace as essential to building excellent work and learning communities. The *Office for Diversity, Equity, and Inclusion* works collaboratively with units across campus on outreach, retention, hiring, and classroom and campus climate issues. The campus provides academic support that is

targeted to specific challenges such as lack of preparation in writing and mathematics, and provides special advising for low-income, first-generation, and Dream Act students.  The campus has also undertaken considerable work to understand and improve retention of these more diverse populations. The campus's continued attention to diversity is reflected in its approach to assessment efforts in essays 3-4 (*degree programs and educational quality*), and in its multiple initiatives described essays 5 (*student success*) and 7 (*sustainability*).

**Understanding and improving retention**. The campus has made significant progress in understanding the factors that influence undergraduate degree completion.  UC Santa Cruz's six-year frosh graduation rate (76.9 percent for the 2008 cohort) are comparable to those of other Carnegie-classified very high research public institutions, and consistently exceeds regression-based predicted graduation rates based on enrolled student demographics and preparation levels.  In 2011 the campus undertook a comprehensive study "*Who leaves UCSC and when? Retention and graduation among freshmen cohorts*" (Exhibit 1) to document the factors associated with retention and graduation across students' careers. Harnessing insights from that research, a newly appointed faculty special assistant to the CP/EVC on matters of retention and graduation is spearheading a series of new initiatives to improve student success. Essay 5 further details campus efforts.

**Continuing progress on accountability for student learning**.  The campus has fully engaged in the formal articulation and assessment of PLOs since its interim report. In consultation with the faculty senate, the VPAA supported departments in establishing student learning outcomes and assessment plans for all degree programs. The campus has established a number of resources to support learning assessment. In addition to the annual PLO assessment reports, external academic program reviews are an opportunity to summarize assessments of degree PLOs and discuss their effectiveness and ways to improve programs. While a solid foundation on which to build, the campus recognizes that its PLO assessment efforts must continue to mature in the coming years.

## Conclusions

As UC Santa Cruz approaches its 50th year, it is an auspicious time to look ahead.  The campus has clear educational goals in support of our core mission and a strong commitment to high standards of quality. We believe that our planning efforts, leadership team, and organization structures strongly position the campus to move its vision forward.  We look forward to the WASC team visit as an opportunity to further explore future directions and issues for the campus.

# ESSAY 2.  Compliance with Standards

## Standard 1: Defining Institutional Purposes and Ensuring Educational Objectives

**CFRs 1.1, 1.2 Institutional Purposes**. We are an R1 research university that cares deeply about the quality of our instruction and our impact on the world. Our campus values are expressed in our Chancellor's mission and vision statement, and further elaborated in Essay 1.

Each undergraduate major or graduate program provides a coherent set of coursework and requirements to provide depth of knowledge and skills in the chosen area, and each has posted learning outcomes that are regularly assessed, as described in Essay 3-4. Our retention and graduation rates compare favorably to public four-year institutions nationally, as further discussed in Essay 5.

**CFR 1.3 Academic Freedom**. Academic freedom is strongly protected at UC Santa Cruz for both faculty and students.  For faculty, the Academic Personnel Manual (APM) 010 describes the UC-wide policy, and Appendix B applies the policy to students.  Also related is the Faculty Code of Conduct, APM 015. Oversight, interpretation, and stewardship are partly provided by the faculty senate Committee on Academic Freedom.

**CFR 1.4 Diversity**. Diversity is a core value for UC Santa Cruz, and we strongly believe in excellence through diversity.  Having people with a range of perspectives and experiences leads to better decisions and better learning.  Our Principles of Community lead off with the importance of diversity to who we are.  Our Office of Diversity, Equity, and Inclusion provides leadership, training, and assistance for diversity and related issues. A variety of resource centers and other units provide support for students, staff, and faculty. Additional discussion is located in our Review under the WSCUC Standards.

**CFR 1.5 Governing Board**. The UC system is governed by its Board of Regents that is enshrined in the California State Constitution (Article 9, Section 9) with a large degree of autonomy.

**CFRs 1.6, 1.7, 1.8 Transparency**. As a public institution, we are subject to the California Public Records Act, and we post much information online.  For example, our WASC review site contains our current and previous submissions and WASC reports and actions.

## Standard 2: Achieving Educational Objectives Through Core Functions

**CFR 2.1 Educational Policies**. All new programs undergo an approval process that includes faculty senate approval, per our shared governance.  Proposals are initiated by faculty, reviewed by academic deans, and then undergraduate programs are reviewed and approved by the campus senate Committee on Educational Policy while graduate programs require UC system-wide senate approval after campus review from the senate Graduate Council.  All programs are based on in-person delivery, although some individual classes involve online or distance learning components.  We do not currently have any purely online programs.  Our program review process is further discussed below under CFR 2.7 and in Essay 5.

**CFR 2.2 Academic Degrees**. Every degree requires a coherent sequence of courses, typically designed to provide both breadth and depth in a field.  Undergraduate degrees require both general education (GE) and major requirements. GE requirements were completely overhauled effective in 2010 as a faculty senate initiative to modernize our requirements and to make them more outcome-oriented. These requirements include two that are diversity-related (cross-cultural analysis, and ethnicity and race).  The other GE requirements relate to core competencies, although not in a one-to-one fashion.

For written and oral communication, we have two introductory courses in writing plus a course in the major on disciplinary communication that covers communication modes most appropriate for the student's particular major (e.g., writing, oral, electronic, multimedia, or other modes). Quantitative reasoning relates to our requirements in mathematical and formal reasoning, scientific inquiry, and statistical reasoning. Information literacy relates to requirements in interpreting arts and media, textual analysis and interpretation, and statistical reasoning. All of these courses involve critical thinking. Essay 3-4 provides a detailed discussion of learning outcomes and assessment.

We teach our students both in the core of their major disciplines, as well as in interdisciplinary areas. Our faculty are known for pushing the boundaries of their fields and for redefining fields of research, and we try to reflect this original thinking in our undergraduate and graduate teaching and training. Doctoral programs necessarily require a substantial research component. Most master's and undergraduate students have opportunities to engage in cutting-edge research or to include relevant experiential learning in their studies.

**CFRs 2.3, 2.4, 2.6 Outcomes and Assessment**. PLOs are posted on each department's webpage, as well as centrally. These have been developed by the faculty, and have been reviewed by both the faculty senate (Committee on Educational Policy or Graduate Council, as appropriate) and by our assessment specialist integrated in the Office of Institutional Research, Assessment, and Policy Studies (IRAPS). Annual updates on outcomes assessment are reviewed by the Vice Provost for Academic Affairs and the assessment specialist. Review of program outcomes and assessment is included in our department external academic program review process, which is further discussed in Essay 6. More discussion of the assessment process and results is given in Essay 3-4.

Course learning outcomes are a required part of the course approval process (see the undergraduate or graduate supplemental sheet).

**CFR 2.5 Student Learning**. As a UC campus, our majors have high standards and push our students to achieve their potential. Our campus has a particular emphasis on excellence in undergraduate education. One of our current initiatives is to ensure that all undergraduates have an opportunity for a Transformative Student Experience, which could include research opportunities, independent study, field work, or other experiential learning. More than 60 percent of our undergraduates become involved in research activities while at UC Santa Cruz.

**CFR 2.7 Program Review**. We have a highly developed external program review process that includes external peer review of program content, standards, and outcomes. Both the faculty senate and multiple levels of campus administration are deeply involved with program review. Examples can be viewed on the academic review portal.

**CFRs 2.8, 2.9 Research, Teaching, Service**. We are an R1 comprehensive research university. Our tenured and tenure-track faculty are all expected to be full service faculty, active in research, teaching, and service. Tenure and promotion require excellence in all three areas. Our criteria for both major promotions and intermediate merit reviews are set in UC system-wide policy, APM 210, particularly 210-1-d. Research includes disciplinary research, interdisciplinary research, and scholarship of teaching in the disciplines. Teaching activity includes both formal (classroom) and informal learning, along with mentoring and advising of undergraduate and graduate students, as well as efforts toward development and assessment of learning outcomes. Expectations for students are established in the PLOs.

**CFR 2.10 Retention and Completion**. We have improved our six-year frosh graduation rate to almost 77 percent (for the 2008 incoming cohort), with a one-year retention rate for frosh of approximately 90 percent. Statistical analysis shows that we retain and graduate undergraduate students at a higher rate than would be predicted by their demographics and levels of academic preparation, indicating that we

are doing well in retention and completion. Of course, we continue to strive for additional improvement, as described in Essay 5.

**CFRs 2.11, 2.12, 2.13 Co-curricular Programs, Advising, Student Support Services**. Co-curricular programming occurs both within the colleges and at a campus level.  Each college provides its own programming, and may be based around the college theme.  At the campus level, the Student Life division oversees much programming, including the Student Organization Advising & Resource Center.

Undergraduate advising starts in the colleges, and then is incorporated in the academic programs as students select a major.  College advising helps students with general questions, selection of a major, and general education requirements.  The programs focus on advising within the major.  The Baskin School of Engineering provides advising from the time of admissions, as many of the engineering majors require careful selection of classes to ensure timely graduation.  Additional advising resources are available through Learning Support Services, as well as through support organizations in the academic divisions, such as the Society of Women Engineers. Tutoring for many of the larger introductory classes is centrally organized through the Modified Supplemental Instruction program.  The Disability Resource Center provides support for students with disabilities.

**CFR 2.14 Transfer Students**. About one quarter of our annual new matriculants are junior-level transfer students.  The Services for Transfer and Re-entry Students office provides advising and support.  We provide housing options specific to transfer students.

# Standard 3: Developing and Applying Resources and Organizational Structures to Ensure Quality and Sustainability

**CFRs 3.1, 3.2, 3.3 Faculty and Staff**. Faculty hiring and review are done in accordance with UC system-wide policies. Individuals are regularly reviewed every two years at the assistant and associate ranks and every three years at the full rank.  The process ensures multiple levels of peer-review: reviews are initiated in the department and include consultation with the faculty senate's Committee on Academic Personnel. Administrative review occurs with the overseeing academic dean, and depending on the personnel action, possibly the CP/EVC and Chancellor. See also CFR 2.8 above. Department chairs ensure coverage of the curriculum through the annual Curriculum and Leave Plan process.  Deans monitor the relative sizes of departments in their divisions.  The Academic Personnel Office and the Vice Provost for Academic Affairs provide development activities, including Assistant Professor Workshops and the Leadership Academy. The latter is also open to staff, and there is an overlapping graduate student leadership certificate program.

Staff hiring and review similarly follow system-wide standards, with hiring, training, and review all run locally through our Staff Human Resources office.

**CFR 3.4 Fiscal and Physical Resources**. As part of the UC system, our budgeting initiates at the campus level but is coordinated through the UC Office of the President. Auditing is centralized at the UC system level.  The *Birds Eye View* (Exhibit 2) provides an overview of the campus' operating budget, as well as key facts and figures on instruction and research. The *UCSC Budget Handbook* (Exhibit 3) outlines how the campus is funded and articulates resource management principles and an allocation strategy that supports the campus's academic as well as institutional support objectives. Financial audits are handled at the system-wide level.

**CFR 3.5 Information Resources**. The library provides both physical and online support for research and creative activity.  Participation in the California Digital Library project provides online access to many materials through this system-wide consortium.  UC Santa Cruz houses the Grateful Dead Archive that provides access to a unique collection of materials of musical and academic importance. The Faculty Instructional Technology Center provides resources and support for instruction.

**CFRs 3.6, 3.7, 3.8, 3.9 Organizational Structures and Decision-Making Processes**. The institutional leadership and organization charts are available at http://www.ucsc.edu/about/administration.html. As a public university, we maintain the highest standards of integrity and accountability. Three of our top administrators, Chancellor George Blumenthal, CP/EVC Alison Galloway, and Chief Financial Officer Margaret (Peggy) Delaney, are accomplished scholars in the fields of astrophysics, forensic anthropology, and marine geochemistry. The Chancellor is responsible to the UC Office of the President, which is overseen by the Board of Regents.

**CFR 3.10 Faculty Academic Leadership**. UC has one of the strongest systems of shared governance in the country and the world, and UC Santa Cruz has one of the most active, productive, and consulted senates within the UC system. In the UC system, the senate consists of all tenured and tenure-track faculty (along with lecturers with security of employment, a sparsely used title for faculty primarily focused on teaching, pedagogy, and governance) and functions through a system of committees. Campus committees connect both to the campus whole senate body as well as to system-wide articulations of the campus committees (e.g., each campus Graduate Council sends a representative to the system-wide Coordinating Committee on Graduate Affairs).

In the UC system of shared governance, the faculty senate has purview over all curricular matters and admissions policies, and the right to be consulted on a range of topics including budget, personnel review, faculty welfare, and the library. At UC Santa Cruz, key committees include the Senate Executive Committee, the Graduate Council (which approves graduate courses and programs), the Committee on Educational Policy (which approves undergraduate courses and programs), the Committee on Planning and Budget (which advises the administration on matters pertaining to planning and budget), and the Committee on Academic Personnel (which advises the administration on all faculty personnel reviews). The faculty senate also includes participation by lecturers ("non-senate faculty"), graduate students (through the Graduate Student Association), and undergraduates (through the Student Union Assembly), with representatives from each of those groups sitting with appropriate senate committees.

Collective bargaining is strong at UC Santa Cruz, as befits a campus with our legacy of political activism. Lecturers, post-doctoral fellows, teaching assistants, and various categories of staff are represented through their own system-wide unions. At UC Santa Cruz, we also have a campus union for senate faculty, the Santa Cruz Faculty Association, making us the only UC campus with collectively organized tenured/tenure-track faculty.

# Standard 4: Creating an Organization Committed to Quality Assurance, Institutional Learning, and Improvement

**CFRs 4.1, 4.3, 4.5 Quality Assurance Processes, Improvement**. The program approval process is described above for CFR 2.1. New undergraduate courses are approved by the faculty senate Committee on Educational Policy; new graduate courses by the Graduate Council.

Program review is described above for CFR 2.7. The review process includes input from stakeholders, including students and faculty. External reviewers meet with faculty and students, and provide an independent assessment for each program. The results of the external review are used for program improvement, with action items determined at the closure meeting and a follow up report within two years.

**CFR 4.2 Institutional Research**. The UC Santa Cruz office of Institutional Research, Assessment, and Policy Studies provides data, analysis, and support for campus quality assurance, assessment, and planning. Our staff are highly qualified, and our assessment specialist has completed the WASC Assessment Leadership Academy.

**CFRs 4.3, 4.4 Culture of Assessment and Improvement**. The institution supports a culture of assessment and improvement, both in general and for teaching and learning in particular, through multiple institutional processes, including external program review (which starts with a department self-study that includes faculty introspection and review of data), the PLO assessment process, and faculty personnel reviews (which include teaching as an integral component). Faculty regularly examine the successes and shortcomings of their programs and incremental changes are common, with major changes more often coming after an external review.

**CFR 4.6 Strategic Planning**. UC Santa Cruz has just completed a year-long strategic planning process, Envision UCSC, which is discussed in more detail in Essay 8. This process included widespread consultation with stakeholders and a planning task force of 57 members of which 32 were faculty.

**CFR 4.7 Changes in the Higher Education Environment**. We discuss this topic more thoroughly in Essay 7. Here we summarize that we have plans for graduate growth, adapting our programs and support services to respond to a changing California student demographic, and increasing our use of new technologies in teaching and learning.

# Essay 3-4.  Degree Programs and Educational Quality: Meaning, Quality, and Integrity of Degrees; Student Learning and Core Competencies

## Overview

In this essay, we explore how MQID at UC Santa Cruz, both graduate and undergraduate, are shaped by our progressive vision of the public research university and are rooted in student learning experiences, learning outcomes, and teaching and assessment practices. It is organized in two parts:

*Meaning, quality, and integrity of degrees*.  We describe how our mission informs MQID at undergraduate and graduate levels. We provide examples of PLOs and describe how integrated curricula, high-impact educational practices, and assessment of culminating experiences support students' achievement of PLOs and core competencies.

*Assessment and quality assurance*. The faculty collectively engage in ongoing, systematic examination and improvement of degree programs through external program review and annual PLO assessment. This part describes the establishment of PLO assessment in all degree programs, ways in which the campus supports faculty and graduate student engagement in assessment, and our campus approach to assessment of the core competencies in undergraduate programs.

## Meaning, quality, and integrity of degrees

MQID at UC Santa Cruz is influenced by our context as a public research university and shaped by our institutional values. These values include the centrality of research and research-active faculty, commitment to providing a quality undergraduate and graduate educational experience, social and environmental responsibility, innovative solutions to society's critical challenges, and diversity, equity, and inclusion. Faculty engage students at all levels in a rigorous pursuit of learning via intellectual inquiry, scientific experimentation, creative practice, and community service. Integrated, comprehensive curricula and co-curricular experiences help undergraduate students develop broad intellectual and multicultural competencies.

With the intent to prepare students for meaningful lifetime engagement in their field of studies and their community, undergraduate students acquire in-depth disciplinary knowledge in their majors and further develop their core competencies in the context of preparation for participation in research and creative projects. Faculty set higher standards for graduate students whom they mentor to become the next generation of innovative leaders in the scientific community, creative fields, education, industry, government, and non-government organizations.

At UC Santa Cruz, PLOs are central to our definition of MQID and are the primary focus of faculty-led assessment for several reasons. Our established program outcomes are comprehensive in scope and differ significantly by major in the research university environment. Meaningful assessment of graduation competencies that leads to program improvement must be done by program faculty and within the major. Our commitment to educational quality is evidenced by the faculty's engagement in establishing learning outcomes-based assessment. As a campus-wide process, PLO assessment has provided a shared framework for groups of faculty within and across programs to discuss and evaluate teaching and learning that define MQID at the UC Santa Cruz. This context frames our approach to defining and assessing undergraduate core competencies through PLO assessment. The General Education component of the undergraduate degree is contextualized for every program by preparing students for in-depth study in their major (which is evaluated through PLO assessment) and providing

them with interdisciplinary breadth of knowledge and skills. We do not explicitly define institutional learning outcomes. PLO assessment has been integrated in our well-established institutional processes such as external program review. Furthermore, the faculty ownership of outcomes-based assessment is derived from our strong system of shared governance and commitment to academic freedom and effective teaching. The campus supports faculty engagement in assessment and innovative teaching, and recognizes faculty for their exceptional teaching (e.g., excellence in teaching awards) (CFRs 2.1, 2.2, 2.4, 2.8).

To establish comprehensive, discipline-specific PLO assessment for each degree program, the faculty have collaboratively reviewed goals, curricula, and assessment practices, and articulated a distinct set of assessable PLOs. Representative undergraduate PLO statements in Table 2 demonstrate that student understanding, communication, and participation in research and creative activity are integral to all programs. In defining learning outcomes for Master's and doctoral programs, faculty set student achievement at more advanced levels. While Master's graduates are typically expected to demonstrate proficiency in fundamental disciplinary knowledge, doctoral degree recipients must demonstrate mastery of fundamental disciplinary knowledge and research methods, as well as an ability to manage an independent research project. (CFRs 2.1, 2.3)

**Table 2. Examples of complete sets of PLOs for undergraduate majors.**

| Types of Knowledge and Skills | PLO Statements |
|---|---|
| **Students graduating with a BS in Molecular, Cell, and Developmental Biology will be able to:** | |
| Disciplinary knowledge and skills, including quantitative, critical thinking, and research skills | *Demonstrate knowledge of how biochemistry, genetics and molecular biology are used to elucidate both the function of cells and their organization into tissues.* <br> *Recognize that biology has a basis in chemistry, physics, and mathematics.* <br> *Present advanced knowledge in the specialized fields of molecular and cell biology.* <br> *Describe how the scientific method is used to explain natural phenomena.* <br> *Generate hypotheses, evaluate data, and design experiments to investigate a scientific problem.* <br> *Understand safe laboratory practices and perform basic molecular biology techniques.* |
| Communication | *Use effective oral and written language skills to communicate scientific data and ideas.* |
| **Students graduating with a BA in History will be able to:** | |
| History, scope, and thematics | *Demonstrate knowledge of a basic narrative of historical events in a specific region of the world.* <br> *Demonstrate knowledge of scope and thematics across different periods, transnational, regional or transcultural history.* |
| Critical reading and research skills | *Distinguish primary and secondary sources; understanding and evaluating historical ideas, arguments, and points of view; and evaluating competing interpretations and multiple narratives of the past.* <br> *Gather and assess primary historical evidence and compiling bibliography.* |
| Collaboration | *Provide constructive and effective critiques of other students' work and completing a shared research project.* |
| Communication | *Present clear and compelling arguments, based on critical analysis of diverse historical sources, and effectively communicate interpretations in written essays and/or other media.* <br> *Develop a research question and completing a well-supported piece of historical writing about it.* |
| **Students graduating with a BA in Film and Digital Media will be able to:** | |
| Research skills, information literacy | *Demonstrate employment of research skills, including the use of appropriate print and technology sources in the discipline, to construct effective arguments.* |

| Disciplinary knowledge and skills | ▪ *Understand the pre-production, production, and postproduction digital media and filmmaking process.*<br>▪ *Demonstrate the relationship between different types of form and meaning through the creation of film and digital media projects or the critical analysis of them.*<br>▪ *Work collaboratively to produce a film or digital media project.*<br>▪ *Demonstrate broad knowledge of film and media history internationally.* |
|---|---|
| Critical thinking | ▪ *Analyze, interpret, and critique films and media from a variety of theoretical perspectives using the critical vocabulary and methodologies of the discipline.* |
| Communication | ▪ *Demonstrate scholarly writing skills appropriate to the discipline of film and digital media.*<br>▪ *Articulate and defend their research and practice in a critical environment.* |

PLOs for all undergraduate and most graduate degree programs are posted on departmental websites and on the campus's assessment website. Undergraduate PLOs are also being published in the campus General Catalog, starting in 2015-16.

**Undergraduate programs**. UC Santa Cruz's undergraduate degrees encompass inquiry-based learning across a range of disciplines, development of the core competencies, deep knowledge and skills in the major, multicultural competencies, and social responsibility skills. This learning is achieved in an integrated and coherent way through the first-year experience in living and learning communities, general education courses, discipline-specific coursework, and co-curricular experiences. (CFRs 2.2a, 2.11)

The college core courses in the first-year academic curriculum are organized around college themes and consist of small writing intensive seminars explicitly designed to help students develop such core competencies as written and oral communication, critical thinking skills, and information literacy skills. In addition, institutional values of social and environmental responsibility and an interdisciplinary approach have shaped curricular and co-curricular activities in each college. For example, the theme of Merrill College, "exploring cultural identities and raising global consciousness", is introduced in the Merrill core course that provides intensive practice in analytical writing, critical reading, and speaking. (See Exhibit 4: *UC Santa Cruz college themes and core courses* for a comprehensive list).

Each student's engagement in the college community is nurtured through co-curricular activities that bring students of all class levels together for speaker and film series, leadership programs, as well as large annual events. For example, College Nine, College Ten, and Oakes College students organize the Practical Activism Conference, an annual conference that draws together members of the campus and the local community, providing students with a variety of opportunities to expand their knowledge outside of the classroom. Multicultural and interdisciplinary aspects of the first-year experience are also reinforced as students from diverse cultural and socio-economic backgrounds and different academic interests develop relationships and a strong sense of community in their colleges.  These experiences help shape their subsequent years as learners. (CFR 2.11)

The breadth of the GE curriculum reinforces an inter- and multidisciplinary foundation of learning and prepares students for in-depth study in their major.  The campus's recent revision of its GE requirements (which went into effect fall 2010) ensures that students gain understanding and experience with a full range of scholarly and creative pursuits grounded in historical and cultural contexts. Each student explores the foundations of scientific inquiry, statistical reasoning, mathematical and formal reasoning, textual analysis and interpretation, interpretation of arts and media, cross-cultural analysis and social construction of race and ethnicity. Students develop the core competencies (written and oral communication, critical thinking, quantitative reasoning, and information literacy) throughout GE courses, and refine and demonstrate them in a disciplinary context within a major. Every undergraduate degree program is required to have an upper-division course on discipline-specific communication skills that typically include both written and oral communication, and all include communication skills among their PLOs (Table 2). (CFR 2.2a)

Fundamental to MQID of a UC Santa Cruz degree is the learning of skills, knowledge, and values that occurs in a student's interactions with faculty who are actively engaged in scholarly endeavors. In defining PLOs, faculty have articulated knowledge and skills related to research and creative activities. Examples of research- and creative activity-related PLOs include:

- Anthropology B.A. graduates recognize and demonstrate a basic understanding of research methods used in the various subfields of anthropology, including but not limited to participant observation, thick description, lab and field analysis, and interviewing.
- Bioengineering B.S. graduates can design and conduct experiments, as well as analyze and interpret data.
- Art B.A. graduates demonstrate the ability to imagine, create, and resolve a work of art.

The most recent *University of California Undergraduate Experience Survey* (UCUES; a biennial UC-wide survey of a broad range of academic and co-curricular experiences) found that 94 percent of graduating seniors at UC Santa Cruz reported having completed a research project, research paper, or a creative activity as part of their coursework, and 78 percent said that it was important to them to learn research methods. In addition, students have opportunities to learn from faculty and graduate students about their research and creative projects in laboratories, computer systems, concert halls, studios, natural reserves, and libraries.  UCUES indicates that about 73 percent of our graduating seniors participate in research by either assisting in faculty-led research or creative projects or by working on student-designed projects under faculty supervision. Both transfer students and students who start as frosh have comparable opportunities to participate in faculty research and report comparable abilities to participate in research and creative activities in their field of studies (Exhibit 5: *Report on Undergraduate Research, UCUES 2014*).

This high rate of experience with research and creative activities is encouraged through communication of research opportunities for undergraduate students on departmental websites as well as through formal campus programs designed to identify research opportunities and connect undergraduate students with faculty and graduate students (e.g., undergraduate research opportunity database). Annual conferences, such as those in Linguistics and Psychology, showcase and celebrate research accomplishments of our students and provide opportunities for students to present their work.  The Chancellor and deans encourage and recognize top undergraduate scholarship and creativity through an annual research award program. (CFR 2.8)

The high quality and integrity of all undergraduate degree programs are ensured in a capstone requirement that allows students to integrate and apply knowledge and skills in their field of study prior to graduation.  Capstone projects and senior writing-intensive seminars are the primary settings in which faculty collect direct evidence of student learning outcome achievement for evaluating and improving the quality of UC Santa Cruz degree programs (see *Assessment and quality assurance* below). (CFR 2.2a, 2.6)

**Graduate programs**. Graduate MQID at UC Santa Cruz are shaped and bounded by the University's central mission of applying, discovering, and advancing knowledge. Graduate programs have highly specialized and discipline-specific curricula, individualized faculty-student mentoring and advising, and training in research, teaching, and professional communication. Review of new degree program proposals and program modifications by the senate's Graduate Council helps maintain MQID. (CFR 2.12)

Quality and integrity in master's degrees are based on standards established by the UC system-wide Academic Senate. For professional degrees, these standards are also consistent with those set by professional societies or government agencies (e.g., California Commission on Teacher Credentialing). Academic master's programs enhance the student's research skills, and professional master's programs introduce frameworks for understanding issues and teach the skills students will need as practitioners. Proficiency in these skills is articulated in the PLOs of all master's-level programs. (CFR 2.2, 2.4)

Fundamental to the meaning of a UC Santa Cruz doctoral degree is comprehensive training in research through rigorous coursework and original research/creative projects, which is supported by faculty mentorship and student participation in the scholarly community. Students develop scholarly writing skills in coursework, through individualized feedback from their faculty advisors, and in article and grant writing courses and workshops. Students have opportunities (and are typically expected) to present their work in department seminar series and at conferences outside UC Santa Cruz. For example, the Graduate Research Symposium is an annual event that features graduate students from all disciplines and recognizes exemplary work through a number of awards. Interdisciplinary research groups and centers such as the Institute for Humanities Research and the Program in Biomedical Sciences and Engineering offer collaborative environments for graduate students to pursue and present their research. (CFR 2.8)

Faculty have articulated PLOs specific to master's and doctoral programs (example in Table 3). Reflecting an emphasis on creating new knowledge, creative avenues, and application of knowledge, all Ph.D. programs contain a PLO that students demonstrate the ability to conduct independent research and generate new and unique knowledge. In the case of our Doctorate of Musical Arts (D.M.A.) in Composition degree, the emphasis is on creative practice. Professional communication skills are consistently reflected in the PLOs established for doctoral and master's programs, including the ability to communicate findings to both professional and non-professional audiences. (CFR 2.2b)

| Table 3. Master's and doctoral program learning outcomes in Microbiology and Environmental Toxicology. | |
| --- | --- |
| | Students graduating with the following degree will be able to: |
| MS degree | ▪ Demonstrate proficiency with the fundamental knowledge in microbiology or environmental toxicology<br>▪ Conduct independent research in microbiology or environmental toxicology<br>▪ Communicate scientific concepts and results in both written and oral forms<br>▪ Demonstrate interdisciplinary skills needed for success in microbiology and environmental toxicology fields, where there is a great need for scientists who have broad, interdisciplinary training<br>▪ Demonstrate knowledge and understanding of ethical standards in proposing and executing professional scientific research |
| PhD degree | ▪ Demonstrate mastery of the fundamental knowledge in microbiology or environmental toxicology<br>▪ Conduct independent research, and manage a research project in microbiology or environmental toxicology<br>▪ Communicate scientific concepts and results in both written and oral forms<br>▪ Demonstrate interdisciplinary skills needed for success in microbiology and environmental toxicology fields, where there is a great need for scientists who have broad, interdisciplinary training<br>▪ Demonstrate knowledge and understanding of ethical standards in proposing and executing professional scientific research<br>▪ Effectively teach science in a classroom environment |

Many programs also include among their PLOs a demonstrated ability to teach. Students have an opportunity to work as a teaching assistant, gaining experience and feedback from faculty. UC Santa Cruz's Institute for Scientist and Engineer Educators has been providing inquiry-based training in science teaching and assessment with a focus on attracting and retaining a new generation of scientists, particularly among women and underrepresented minorities. The Chancellor's Graduate Teaching Fellows Program offers graduate students an opportunity to design and teach innovative undergraduate courses or mentored research experiences on topics related to their dissertation research and prospective teaching field.

Educational quality is ensured by faculty committees that systematically and collaboratively evaluate student performance at critical milestones, including qualifying examinations, research proposals, and dissertation defenses. Faculty use this direct evidence of PLO achievement for evaluating and improving the quality of graduate programs. The biennial UC Santa Cruz Graduate Student Survey is an established venue for students to reflect on their experiences with various aspects of the program and evaluate their preparation to engage in research and creative activities. We consistently achieve a 50 percent response rate and use the student self-evaluation as indirect evidence in PLO studies as well as feedback during the academic program review process (see the next section and Essay 6). (CFR 2.4, 2.6, 4.3)

## Assessment and quality assurance

A locally-owned, faculty-driven, and program-specific assessment of learning outcomes has been established as an annual process aimed at continuous program improvement. For a holistic, multi-year view, we have integrated PLO assessment within the framework of our existing program external review cycle, which is strongly institutionalized. We refer to the annual PLO assessments as studies because we approach assessment as research on teaching effectiveness and devote time and effort to collect valid and reliable evidence. Qualitative and quantitative methods are used, and statistical analysis is used to evaluate equity in learning outcomes across different student groups. (CFRs 2.4, 2.7)

**Establishing PLO assessment**. The campus's initiative to establish consistent and formalized PLO assessment in all degree programs was supported by the Faculty Senate Committee on Educational Policy and Graduate Council, and was completed in three phases.

*Phase 1: Articulating PLOs, curriculum alignment, and multi-year assessment plans.* (CFRs 2.1, 2.2, 2.3)

In 2012-13, a process was piloted in four departments with large undergraduate degree programs, and by April 2013 the campus-wide initiative was launched (Exhibit 6), with the process overview (Exhibit 7) and assessment templates disseminated and published on the campus's assessment website. In fall 2013, department chairs met with the campus's ALO and the campus assessment specialist from the Office of Institutional Research, Assessment, and Policy Studies.

Faculty examined their program curricula, discussed programmatic goals, and articulated PLOs. To ensure that the curriculum supports student achievement of PLOs, all instructors teaching in the program provided input for a curriculum matrix (a.k.a., "curriculum map"). They identified opportunities for students nearing completion to demonstrate each of the PLOs, and developed a multi-year assessment plan. Most departments completed this collaborative review of programs by December 2013.

Phase 1 resulted in faculty articulation of a common vision for each program that was communicated to the students. As PLOs were posted on departmental websites, web links were published on the campus assessment website. Additionally, the faculty senate has taken steps to widely publicize the undergraduate PLOs by mandating their inclusion in the General Catalog starting in 2015-16.

*Phase 2: The first round of annual PLO assessment studies.* (CFRs 2.5, 2.6, 4.3)

In January 2014, faculty began articulating standards in evaluation rubrics and designing their first PLO studies. They identified relevant courses and signature assignments from which they collected direct evidence and planned how to collect indirect evidence. The campus process for PLO assessment was formalized in an annual PLO report template. An electronic rubric was introduced to assist faculty with collection of direct evidence and was piloted in one program.

A deadline of June 30, 2014 was established for completion of the first annual PLO studies. Some departments produced reports, which have been reviewed by the ALO and the assessment specialist. In fall 2014, The ALO provided detailed feedback to programs on their progress in establishing PLO assessment.

***Phase 3: The second round of annual PLO studies***. (CFRs 2.4, 4.4, 4.5)

Drawing on the prior year's experience, faculty developed standards for assessment of the next undergraduate program PLO(s) and designed studies to collect data during the 2014-2015 academic year. Data collection either continued or began for graduate programs in fall 2014.

In October 2014, the first annual Symposium on Assessment was held as a first step toward establishing learning communities for faculty across programs to work collaboratively on developing assessment methods. This event featured presentations and round-table discussions by UC Santa Cruz and UC Merced faculty, graduate students, and assessment staff. Over 60 participants shared their experience with and ideas for establishing a collaborative process of PLO assessment, mentoring graduate students in assessment, approaching assessment as pedagogy, and presenting assessment skills on the job market and in tenure and merit review.

**Course-Level and General Education Outcomes.** All new courses must define course learning outcomes as part of the course proposal. Faculty are responsible for assessing those outcomes in the context of the course. As existing courses undergo revisions, outcomes are defined for those courses where they were not explicitly established.

Analogous to our approach for core competencies, we approach assessment of GE outcomes through our PLO assessment, as many GE courses are also pre-requisites or requirements for undergraduate majors. For instance, the mathematical and formal reasoning GE articulates into quantitative reasoning in many majors. As discussed above, Disciplinary Communication is another GE that is expressed and evaluated through PLO assessment. Our Writing Program faculty have begun a learning outcomes assessment study of the Composition 1 in fall 2014, and will collaborate with University Librarians to evaluate information literacy and other learning outcomes of Composition 2 in 2015-2016. We do not currently assess those GEs that fall outside the scope of the PLOs and thus provide the breadth of intellectual knowledge and skills. Our faculty senate Committee on Educational Policy regularly reviews GE requirements, and is planning for a comprehensive review of the writing requirements in 2015-16.

**Campus support for assessment**.  We expanded the key functions of the then-Office of Institutional Research to include support for PLO assessment led by a specialist who completed the WASC Assessment Leadership Academy. This approach has resulted in support for PLO assessment that effectively utilizes the reconstituted Office of Institutional Research, Assessment, and Policy Studies (IRAPS) access to student and survey data, analytical expertise, and knowledge of student academic and social experiences. (CFRs 4.1, 4.2)

The assessment specialist maintains the campus assessment website with guidelines and resources, meets with faculty in one-on-one meetings, and presents at departmental and divisional meetings. She has provided assistance to faculty for defining PLOs, developing evaluation rubrics and assessment plans, collecting and analyzing assessment evidence, and preparing annual PLO reports. In addition, she has developed an approach to examine equity in learning outcomes for each program by integrating direct evidence collected by faculty and indirect data with student data on first generation status, transfer status, gender, race and ethnicity. Because she oversees both undergraduate and graduate student surveys, she has developed analytical reports to provide indirect evidence tailored to specific PLOs. She has trained and supervised graduate student research assistants who work with her as a team to integrate direct and indirect evidence with institutional data and conduct statistical analyses.

The campus assessment website features a number of resources for faculty, including:

- *Guidelines for the Development and Assessment of Program Learning Outcomes* (Exhibit 7), which describes the campus framework for defining and assessing PLOs, providing step-by-step guidelines for faculty, with an overall goal of using evidence for program improvement.

- Templates and examples for multi-year assessment plans, curriculum matrices, and evaluation rubrics (e.g., for oral presentation, qualifying exam, and thesis defense).

- Guidelines for preparing an *Annual Academic Program Report on Assessment of Learning Outcomes* (Exhibit 8), with a template for results and recommendations for program improvement.

- Program-specific reports developed by the IRAPS staff from student surveys (UCUES and the Graduate Student Survey) to provide faculty with indirect evidence (Exhibit 9) for PLO assessment. Each report contains an analysis of senior or advanced graduate students' self-reported competencies. Each undergraduate program report includes analyses of equity in learning outcomes by transfer status, first generation, gender, and race/ethnicity. It also provides comparative data from similar UC programs and from other programs within the same academic division at UC Santa Cruz. Graduate program reports include comparisons with other programs in the same academic division.

- An electronic tool ("e-rubric") for faculty conducting assessment, which is especially useful for collecting data over time in graduate programs.

- Assistance from IRAPS staff with in-depth analysis of direct evidence collected by faculty

- Presentations from the Symposium on Assessment to serve as resources to the wider campus community.

**Annual PLO Assessment.** Assessment of PLOs is an ongoing, collective process typically led by program-based faculty committees. Assessment studies focus on evaluating graduating students' competencies as defined by PLOs to inform program improvement across various aspects of teaching, learning, curriculum, and assessment. (CFRs 2.2, 2.4, 2.6, 4.3)

Each program submits an annual report on PLO assessment activity, results, and conclusions. Development of the report facilitates faculty discussions and decisions regarding the quality of the curriculum, pedagogy, advising, and assessment, as well as proposed improvements. Annual PLO reports are reviewed by the Vice Provost for Academic Affairs (VPAA) and the campus specialist on assessment, and are made available to the faculty senate and the academic deans via our portal. Annual reports are also reviewed during the external program review process (discussed below).

As further evidence that the assessment of learning outcomes is an integral part of teaching and program improvement, the campus explicitly values assessment effort as one of the factors that contribute to the teaching component of faculty personnel review (see communication from the Campus Provost and Executive Vice Chancellor to deans and department/program chairs). (CFRs 2.9, 3.2)

During 2013-2014, most programs established multi-year plans for annual PLO assessment studies focusing on one to two PLOs in undergraduate programs and two to three PLOs in graduate programs (with the remainder doing so in 2014-15). These plans specify both direct and indirect evidence of student learning collected close to the time of graduation.

Three main sources of direct evidence for assessing undergraduate PLOs are embedded assignments, capstones, and individual student portfolios. UCUES provides a source of indirect evidence that is sometimes complemented by a program-based survey.  In the first annual PLO studies in undergraduate programs, the faculty committees developed rubrics to articulate their criteria and standards for evaluating student achievement. Where appropriate, faculty considered VALUE rubrics in initial rubric design. Many studies evaluated student work using multiple criteria applied to final papers in senior

seminars. Faculty took special care to draw representative samples from courses taught by different instructors, to select assignments that align with their evaluation criteria, and to ensure inter-rater reliability. Many programs conducted an in-depth equity analysis of student achievement by first generation status, transfer status, gender, and race/ethnicity with assistance of the assessment specialist. In 2013-14, 21 of our 57 undergraduate programs submitted PLO study reports, and these are posted in our campus portal. We expect all of our undergraduate programs to complete PLO studies in 2014-15 and these will be posted as they are submitted over the summer and fall of 2015.

In doctoral programs, faculty have incorporated PLO assessment at several milestones of student progress in the program.  While the format of the Qualifying Examination (QE) differs by discipline, every doctoral student must advance through a QE and must prepare a thesis defense. In nearly all doctoral programs, faculty committees have articulated their standards in rubrics at the QE and defense and collect evidence for PLO assessment. The Graduate Student Survey is a source for indirect evidence.

Examples of changes that have resulted from PLO assessment include:

- Adoption of a single consistent style guide across all courses in the program courses (e.g. the Chicago Manual of Style) and revising course content to ensure that citation and style practices are taught in specific upper-division courses and reinforced throughout the curriculum.

- Making the disciplinary training of the majors more explicit and uniform as soon as students declare the major by making an introductory "skills and methods" course mandatory.

- Review of assignments in upper-division and capstone courses to help students improve their analysis of the context and assumptions of their positions.

**Assessment of core competencies**. UC Santa Cruz has approached core competency assessment through annual evaluation of PLOs by faculty committees in each program. This approach is consistent with an integrated curriculum where students initially develop core competencies in general education courses and further cultivate them in upper-division courses and capstone experiences specific to their majors. The emphasis on continuing development of the core competencies in the major is evident in articulation in PLO statements (Table 4) and is demonstrated in the curriculum alignment matrices for each program. We consider written and oral communication as one joint core competency for institutional assessment purposes. Due to the Disciplinary Communication requirement, all students learn modes of communication most appropriate to their major, typically including both written and oral communication, but potentially including multimedia communication, technical writing, or graphical displays. (CFRs 2.2, 2.3, 2.4)

| Table 4. Articulation of the Core Competencies in Program Learning Outcomes. | | |
|---|---|---|
| Core Competencies | Program Learning Outcomes | Examples of PLO statements |
| Written and oral communication | All programs have a PLO about writing in one's field of studies. Where applicable, programs have a PLO about other discipline-specific means of communication. | <ul><li>Psychology BA graduates will demonstrate effective communication skills following professional conventions in psychology appropriate to purpose and context.</li><li>Film and Digital Media BA graduates will demonstrate scholarly writing skills appropriate to their field of studies.</li><li>BS graduates in Earth Sciences will synthesize and communicate their knowledge of geological concepts through written, oral, and graphical representation.</li></ul> |

| Critical thinking | All programs have a PLO addressing critical thinking skills | • BA graduates in Sociology will demonstrate critical thinking and critical citizenship skills intended to promote social justice through the ability to analyze and evaluate social, political, and/or cultural arguments. <br> • Graduates with a BS degree in Biology will be able to generate hypotheses, evaluate data, and design experiments to investigate a scientific problem. <br> • Philosophy BA graduates will demonstrate an ability to argue cogently for a philosophical point and to analyze and criticize the arguments of others. |
|---|---|---|
| Quantitative reasoning | As appropriate, programs have a PLO about skills beyond those defined in campus general education | • Business Management Economics BA graduates will use empirical evidence to evaluate the validity of an economic argument, use statistical methodology, interpret statistical results and conduct appropriate statistical analysis of data. <br> • BS graduates in Electrical Engineering will be able to apply knowledge of mathematics, science, and engineering. <br> • Physics BS graduates will demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics. |
| Information literacy | Addressed in research-related PLOs | • Chemistry BS graduates will be able to use modern library search tools to locate and retrieve scientific information about a topic, chemical, chemical technique, or an issue relating to chemistry, going beyond textbooks, common handbooks and general online resources such as Wikipedia. <br> • BA graduates in History will be able to gather and assess primary historical evidence, and complete a bibliography. <br> • Anthropology BA graduates demonstrate knowledge of basic steps involved in scholarly research, including locating and critically evaluating scholarly and other information sources relevant to the chosen topic. |

We found that grounding assessment of the core competencies in the majors has a number of advantages. At a research university, evaluation of core competencies as graduation competencies only makes sense in the context of a given major field of study. In this framework, faculty assess a PLO with the criteria specific to their field and by evaluating original student work, which results in high quality, authentic assessment. This allows for faculty-owned, in-depth analysis of student learning, as well as engaging broad constituencies of faculty in assessment to build their expertise and institutionalizing assessment practices.

For institutional-level assessment analysis, the annual PLO reporting process provides the campus assessment specialist with program-specific data and recommendations for aggregation. The first round of PLO studies (phase 2 noted above) showed that many programs assessed a PLO related to communication, and some evaluated critical thinking and quantitative reasoning, therefore we have initial assessment results for these competencies that are summarized in Exhibit 10: *2014 UCSC Core Competencies Achievement Report*. This report includes examples of how core competencies are specified in PLOs, followed by findings and recommendations for each academic division. These results, along with results for information literacy, will be updated annually as programs progress in executing their assessment plans. (CFR 2.2a)

As a result of a three-month campaign, we achieved a 40 percent response rate in the 2014 UCUES survey that provided us with indirect evidence of student achievement in the core competencies. We analyzed graduating seniors' responses by various student characteristics, including transfer status and first generation status. Program-specific results were provided to departments conducting their PLO studies, and also summarized by division in Exhibit 10.

Based on the findings of the 2014 PLO studies, IRAPS can more effectively support faculty when they focus on evaluating one or two core competencies in common. Specifically for 2014-2015, we recommended assessment of either communication or critical thinking in programs in the Arts, Humanities, and Social Sciences Divisions, and on quantitative reasoning in Physical and Biological Sciences and Baskin School of Engineering programs (some of the latter are ABET accredited with an established annual assessment of all PLOs). In the next four years, programs will have evaluated all their PLOs related to the core competencies, and developed and implemented recommendations. Our campus plan is to close the loop on core competency assessment by fall 2019. (CFR 4.2)

**Academic Program Review**.  To meet its goal of educational excellence and to promote constant improvement, UC Santa Cruz has mature systems of academic program review of existing programs every six to eight years and new programs as they are established (see Essay 6). Our existing program reviews serve as a rigorous process by which we engage in continuous evaluation of MQID. This process starts with an introspective faculty examination of all aspects of the programs, followed by a review by external experts, and ending in recommendations and actions to be taken for improvement. Each degree program review now includes a discussion of PLOs, the assessment process, a summary of assessment findings, and improvements made as a result of those findings. (CFR 2.7, 4.3, 4.4, 4.5)

As a product of this process, faculty review the meaning of the degree(s) they offer and the broad and specialized aptitudes students should have acquired upon completing them (as specified in PLOs). Faculty examine a wide array of data covering instruction and effectiveness of the programs, allowing for a broad view of curriculum effectiveness over multiple years. The self-study appendices (available in the portal) also include comprehensive analyses of student survey findings that compare our students' experiences in the program (including learning outcomes) with student experiences in other programs in their academic division and in comparable programs across UC.

The review process invites peer scrutiny and expert external opinion, resulting in a conversation that validates learning outcomes and standards, leads to a better understanding of the program, and identifies avenues for improvement.

Examples of changes spurred from the academic program review process include:

- Philosophy B.A.: Course requirements were restructured to increase systematic training in value theory and metaphysics and/or epistemology, which supports the following PLO: "Students will demonstrate familiarity with the central concepts and key debates in the core areas of contemporary philosophical thought, including ethics, metaphysics, and epistemology."
- Literature B.A.: The faculty assessed existing concentrations by reviewing the curriculum and student enrollment, and closed two that were unsustainable.
- The Writing Program: The External review committee recommended articulation of a consistent theoretical understanding of writing as a field of study to guide course conceptualization and inform and clarify the educational objectives of each writing course and learning outcomes leading to student success. An assessment study focusing on learning outcomes in the core writing courses was recently launched.

Improvements to student learning and pedagogy at the graduate level have also resulted from academic program reviews since our last accreditation:

- Astronomy and Astrophysics Ph.D. program: Faculty implemented nearly all recommendations of the external review committee, including earlier access to research with a highly structured first year project, a clear timeline of annual goals and milestones, and added additional milestones, all of which improved progress toward degree completion and time to degree.
- Chemistry Ph.D.: Faculty reduced the number of required courses and provided for earlier exposure to research.  There is current reconsideration of the attainment exam to conform to recent advances in the field and a reduction in the number of exams students must pass.
- Linguistics Ph.D.: Faculty revised core requirements to address the recommendation to integrate experimental and quantitative work and revised the qualifying paper requirement of

two subject areas to allow for students to pursue projects in overlapping subfields but with distinct methodological approaches.

Because of the success of our academic program review process in assessing the effectiveness of our departments' overall research and degree programs, we have incorporated assessment of PLOs into the process to provide the opportunity to view the ongoing annual PLO assessment process in a broader perspective. A multiple-year view of PLOs helps our faculty be intentional and reflective as teachers. It allows for understanding our degrees as a whole, assessing MQID, and ensuring continuous effort toward improvement.

# Essay 5. Student Success: Student Learning, Retention, and Graduation

## Overview

Promoting and nurturing student success is at the core of UC Santa Cruz's identity as a premier research institution with a passion for excellence in education. Student success means that our students have learned what their programs of study intend, and that they have acquired the skills, knowledge, and abilities to be successful in furthering their education and pursuing a career (see Essay 3-4). Fundamental to student success is ensuring that our completion rates are high and that the average time it takes our students to earn a degree is close to the normative time to degree, both for undergraduate and graduate students, and across student populations. This essay addresses:

1. Trends in retention and graduation rates at UC Santa Cruz;

2. UC Santa Cruz's undergraduate retention and graduation rates in context;

3. Factors associated with undergraduate retention and graduation;

4. Actions to improve undergraduate student success at UC Santa Cruz;

## Trends in Retention and Graduation Rates at UC Santa Cruz

We routinely track and report retention and graduation rates for both frosh and transfer (Exhibit 11) entrants by student characteristics, including gender, race/ethnicity, residency status, and college, as well as financial aid status and level of academic preparation as measured by high school GPA and SAT scores. In addition several academic success programs, such as our Bridge program for less prepared students and the WEST program which supports transfer students majoring in STEM fields, monitor retention and graduation rates of program participants and benchmark them against rates for similar students that are non-program participants. (CFRs 4.1, 4.2)

UC Santa Cruz's six-year graduation rate has consistently reached 72 to 74 percent for each of the frosh cohorts entering between 2003 and 2007, rising to 76.9 percent for 2008. Graduation rates closely parallel first to second year retention, and among those same cohorts the one-year retention rate are stable at around 90 percent. Among transfer students four-year graduation rates were approximately 82 percent for the three most recent cohorts, exceeding the equivalent frosh six-year rates, while the most recent one-year transfer retention rates are now consistently above 90 percent.

Retention and graduation rates for master's and doctoral programs are also routinely tracked, and are part of the academic program review process (see Essay 6). These data are provided to departments for consideration during the self-study as well as to external reviewers. (CFR 2.7)

## Undergraduate Retention and Graduation Rates in Context

We regularly benchmark our graduation rates against appropriate comparators. UC Santa Cruz's frosh graduation rates compare favorably to public four-year institutions nationally and these rates are within the range of other UC campuses. Our graduation rates are especially strong considering that most of the entering frosh who do not earn a degree at UC Santa Cruz within six years successfully continue to pursue their education. For example, in addition to the 72 percent of the 2007 entering frosh who graduated from UC Santa Cruz within six years, ten percent had gone on to earn a degree

elsewhere and another nine percent were still actively seeking a degree (Student Achievement Measure Project). (CFR 2.10, 4.1)

In addition to external benchmarking we regularly evaluate our graduation rate performance relative to the students we serve. A national study conducted by the Higher Education Research Institute (HERI) demonstrates the relationship between student characteristics and institutional graduation rates. We have consistently found that UC Santa Cruz's actual six-year graduation rates exceed regression-based predicted graduation rates derived from HERI's research, which are based on demographics and preparation levels of the students we enroll. For example, UC Santa Cruz' 2007 frosh cohort six-year graduation rate of 72 percent exceeds the predicted rate of 64 percent. Despite our success, we strive to do better, with efforts described in the rest of this essay.

## Factors associated with undergraduate retention and graduation

Since our interim report the campus has made considerable progress understanding our retention and graduation patterns. In 2011 the campus undertook a comprehensive analysis, *Who leaves UC Santa Cruz and when? Retention and graduation among freshmen cohorts* (Exhibit 1), which examined the relationship between retention and graduation and a number of variables including academic performance at UC Santa Cruz, academic preparation prior to matriculation, and socio-demographic characteristics. Additionally, for the subset of students who responded to the UC Undergraduate Experiences Survey (UCUES) in spring 2010, we considered the influence of experiential factors such as satisfaction, sense of belonging, academic engagement and disengagement, self-assessed gains in academic and social competencies, and perceptions of campus climate. Findings from the study indicate that across students' careers, low academic performance is consistently one of the best predictors of attrition. Lower overall satisfaction and sense of belonging is also a consistent and important contributor to students leaving after the first or second year. (CFR 2.10)

UC Santa Cruz's one- and two-year retention rates tend to be fairly equal across race/ethnicity categories and first generation status. In terms of ultimate graduation rates, gaps emerge with underrepresented students of color and first generation college goers at greater risk of not "making it across the finish line." These gaps, however, are smaller for six-year than four-year rates, and race/ethnicity differences are smaller than on many other comparable campuses and smaller than statistical modeling would lead us to expect.

A critical area that was not addressed in the 2011 study was the impact of major on retention and graduation. Because entering frosh, with the exception of some engineering majors, are not admitted directly to a major but only propose a major on their application, calculating graduation rates by entering major is not possible. Approximately one quarter of entering frosh do not have a proposed major at matriculation, and roughly half change majors at some point during their undergraduate careers. We recently developed a set of reports that illustrate patterns of major migration to enable regular monitoring of these rates by program. These reports are now being shared with deans and department chairs. (CFRs 4.1, 4.2, 4.3)

## Actions to improve undergraduate student success

The Undergraduate Student Success Team was formed in December 2012 at the request of Campus Provost/Executive Vice Chancellor (CP/EVC) Galloway to develop recommendations for improving undergraduate retention rates, graduation rates, and time to degree at UC Santa Cruz. The team determined that its approaches must also include preserving access to and achievement of equitable outcomes for all students while maintaining the quality of our undergraduate education. Among their

recommendations were two immediate actions designed to provide both focused and sustained high-level commitment that would result in durable institutional change:

(i) Appoint a faculty special assistant to champion and catalyze rapid campus-wide reforms that increase degree completion; and

(ii) Expand access to decision-support data that empowers students, advisors, and programs supporting student success (e.g., data management and analysis provided by the institutional research team; self-service reports specifically tailored to metrics influencing degree completion; improvements to the student information system such as degree audit, progress toward degree, and student self-service advising; improvements to student advising and academic support in the colleges).

During 2013-14, the newly-appointed faculty special assistant assembled a Steering Committee of a broad range of campus constituencies to improve retention and time to degree, including a data sub-committee to identify information needs and propose solutions. (CFRs 4.3, 4.5)

Campus initiatives undertaken as a result of the recommendations of the Undergraduate Student Success Team or through other individual efforts include (CFR 2.13):

- The Educational Opportunities Program has implemented a "Crossing the Finish Line" project, focused on students who applied to graduate but were denied due to missing requirements or those who have "stopped out" and have not filed a plan to return. Trained undergraduate and graduate student interns reach out to and work one-on-one with these students to develop and implement plans for degree completion. To date the program has contacted over 1,000 such students resulting nearly 100 completed degrees with more in the pipeline.

- We are planning a new Summer Academy program for a selected population of incoming frosh who will need academic support.

- With a science education grant from the Howard Hughes Medical Institute, faculty will develop new blended learning introductory courses in chemistry, physics, and biology, with the aim of improving persistence through the degree of the students who enter planning to study science.

- With First in the World grant funding in collaboration with investigators at four other universities (*Moving the Dial on Inequality Challenges: Broadening Student Access and Success and Transforming Institutions through Campus-Community Engagement*, P116F140033), the Oakes College Provost has begun developing and implementing enhanced community based learning experiences within academic programs, with the goal of increasing academic engagement and sense of belonging among underserved students.

UC Santa Cruz is also fully engaged in improving the data used to inform programs and policies, and improving student risk assessment and early intervention capabilities. (CFR 4.1) Examples include:

- Institutional Research, Assessment, and Policy Studies is providing department-level reports on retention, time to degree, and major migration starting fall 2014, and engaging departments to think about graduation rates and time to degree and respond creatively.

- In fall 2014, we piloted a comprehensive exit survey for students who apply for a leave of absence or withdraw, allowing the collection of nuanced data on why students leave UC Santa Cruz. The survey will be implemented campus-wide soon.

- We have invested this year in a study of the effectiveness of our financial aid strategies in recruiting and retaining students.

# Essay 6. Quality Assurance and Improvement: Program Review, Assessment, and the Use of Data and Evidence

## Overview

During our last review, the WASC team concluded that UC Santa Cruz had an established external academic program review process that is "quite outstanding". Program now includes review of PLO assessment and provides a rigorous process for quality assurance of MQID and improvement of degree programs. This process exemplifies our culture of self-examination, evaluation, and improvement and allows for thoughtful reflection of the past and for strategic planning for the future. Central analytical support is utilized throughout program review, assessment of student learning, and evidence-based strategic planning. This essay is organized into three parts:

1. Program Review. We describe our external program review process, which has been the most effective of our processes for quality assurance and improvement, as well as our review of new programs, which ensures academic quality and resource sustainability.

2. Assessment. We describe how faculty systematically collect evidence of student attainment of PLOs to continuously improve the curriculum, teaching, and advising.

3. The Use of Data and Evidence. We describe our commitment to maintaining accessible reports and data systems for broad campus use in planning and operations.

## Program Review

External review of existing programs is an institutional priority for UC Santa Cruz. All academic degree and non-degree programs undergo periodic holistic reviews that examine the research and educational effectiveness of their faculty and curriculum and provide critical assessment of status and direction. Review includes input from the academic unit itself, from the campus community (including administration and faculty senate), and from a committee of external scholars. (CFRs 4.1, 4.3, 4.5)

This systematic process covers all aspects of a department, including undergraduate and graduate curricula, research, and resources. Reviews are designed to be forward-looking and strategic, with past efforts evaluated in the context of future planning. Reviews provide opportunities for departments, divisions, and the campus to make informed decisions on managing the curriculum and program requirements.

There are several key aspects to the process of external review at UC Santa Cruz that make it a highly effective quality assurance and improvement tool:

- The department prepares a self-study where critical issues and strategic plans are articulated.
- Administrative and faculty senate review of self-studies allows for appropriate and timely examination of program quality and resources.
- The external review committee is comprised of least three external distinguished scholars and experts in the relevant field of study, with at least one member being faculty at another UC campus.
- The process provides for *all* constituents to be included in the assessment of the department faculty and programs, including faculty, undergraduate and graduate students, postdoctoral fellows, research and administrative staff, and other departments or faculty affiliated through curricular support or research/creative synergy.
- All reviews are closed through a report from the Vice Provost for Academic Affairs, which

includes a list of questions and/or action items addressing any outstanding concerns raised. Departments and academic deans are held accountable for answers and actions taken through a mid-cycle report that is completed within two years.

- The self-study contains a review of annual PLO assessment studies, including an evaluation of strengths and weaknesses of a program through evidence from student surveys, a comparison of the concurrence of indirect and direct evidence of student learning, and a discussion of how program assessment has been used to guide program improvement.

Consistent data are required as part of the self-study and are provided by Institutional Research, Assessment, and Policy Studies (IRAPS), the Graduate Division, and the Office of Research. Data provided includes multi-year histories of curriculum; faculty workload; student gender and ethnicity; analyses of the most recent student surveys; graduate admissions, retention, and graduation; and extramural funding.

Systematic external reviews are culturally entrenched and allow departments, divisions, and the central campus to track key issues that may affect instruction and student learning and to methodically evaluate changes in curriculum and administration. Over time, they allow the campus to focus on the health of such issues as student advising, training of graduate instructors, and graduate student support.

External review promotes the introduction of novel ideas that are vetted internally and externally. An example is the Program in Biomedical Sciences & Engineering (PBSE), an umbrella admissions program launched in 2009 and that spans the biomedical research subfields of four departments in two academic divisions. The program has broadened the research choices of first year doctoral students through laboratory rotations with different faculty. Student surveys have shown notable increases in self-reported levels of preparation since the establishment of PBSE.

External reviews also offer a mechanism for the administration or faculty senate to intervene when the degree program quality has been severely compromised. Examples of intervention stemming from external reviews have included suspension of admissions subsequent to strong concerns over curriculum and welfare of doctoral students and a department's inability to plan sufficient curricular capacity with existing faculty resources. In any of these cases, criteria are set for re-instatement of admissions. In the above case, two ad-hoc reviews were completed to ensure change was occurring and to establish accountability; that department has since had two positive external reviews providing evidence of a healthy doctoral program.

External review procedures are reviewed annually and revised as necessary. Since our last WASC review, the external program review process has incorporated the following key features that are new or improved:

- A schedule for the reviews is published, and all academic units are reviewed on a regular six to eight-year cycle.
- Assessment of PLOs has been fully integrated into the review process and is addressed in the departmental self-study.
- The self-study document was expanded to include review of interdepartmental academic programs within a department with other degree programs.

New program reviews of academic program proposals are comprehensive, not only evaluating the academic quality and integrity of the program, but also its feasibility, operational needs, enrollment demand and capacity, accessibility, financial sustainability, and impact on other degree programs. Intermittent revisions to this document are made following consultation with academic administrators and the faculty senate. (CFRs 2.1, 2.4)

Review of new programs is described in *Policies and procedures governing the establishment, disestablishment, and change of academic units and programs*. The procedures reflect the assigned

responsibility for courses, curricula, and degrees to the faculty, and responsibility for academic units and resources to the administration. The review and approval process (Figure 2) is tiered and promotes mutual endorsement of any proposed action because both faculty and administration support are necessary for a program or unit to thrive.

**Figure 2. New degree program process.**
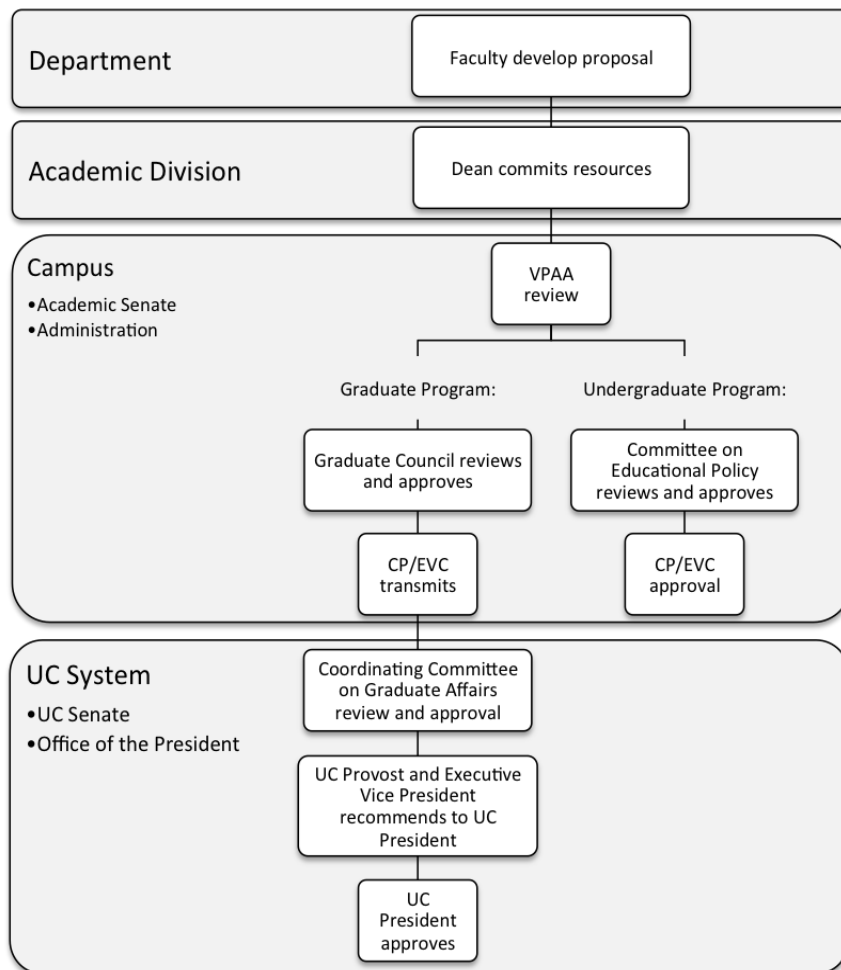


The development of the Computer Science: Computer Game Design major within the School of Engineering exemplifies the process and demonstrates how faculty engaged in cutting-edge research initiate programmatic change. In response to growing cultural and economic importance of the computer gaming industry within California and the increasing complexity and specialization of gaming systems, faculty determined that there was a need for a program to train students in the technical, narrative, and artistic underpinnings of computer games. The proposal was developed in the Computer Science Department with input from 12 other departments and programs that crossed divisional boundaries. Once introduced, Computer Game Design quickly became one of the fastest growing and most popular majors on the campus and has since resulted in the establishment of a M.S. program.

**New curriculum review.** New courses are developed by individual faculty members, or small groups of faculty, who identify a programmatic or pedagogical need. A course syllabus is developed and reviewed by the unit's curriculum committee that evaluates course content, learning outcomes, student demand, faculty workload and other related resource needs to ensure the success of the course. A course proposal is then submitted for divisional review, followed by the faculty senate's Committee on

Educational Policy or Graduate Council review and approval. Policies and guidelines are published for faculty guidance in developing curriculum. (CFR 2.4)

If a course uses a novel delivery method, such as online instruction or telecast delivery, there is a higher level of scrutiny. The Committee on Educational Policy's approval process for online course proposals include supplemental questions addressing modes of instruction, pedagogical advantages/disadvantages, and course mechanics and logistics.

## Assessment

The strength of program review provides an example for institutionalizing assessment. Part of the strength is its basis in deep faculty engagement. Thus the campus has established a systematic faculty-led PLO assessment process for evaluating student learning according to articulated standards. Faculty use this evidence to assess curriculum quality and pedagogical methods, and for developing recommendations to close the assessment loop. (CFRs 2.2, 2.4, 2.6, 4.3)

As a matter of policy, UC Santa Cruz engages in regular and meaningful assessment of PLOs via two processes: annual program assessment and academic program reviews.

1. Annual program assessment involves completing a PLO assessment study. The Annual Academic Program Report on Assessment of Learning Outcomes (Exhibit 8) provides guidelines of the preparation of these reports (see Essay 3-4).

2. Multi-year PLO assessment is comprehensively reviewed during a department's external review. This provides an analysis of plans for growth or renewal, and improvement of instruction and scholarship.

Both annual PLO assessment and external program review processes ensure a feedback loop to the faculty on how well the curriculum supports the overall learning outcomes expected of any student completing a specific major and degree. This systematic approach also allows for flexibility to revise PLOs and assessment in order to adapt to new assessment tools, re-prioritize PLOs in rapidly changing or emerging fields of study, or add new PLOs as cultural, professional, or field-based changes occur (e.g., the emergence of the importance of ethics in the sciences). (CFRs 2.7, 4.3, 4.4)

## The Use of Data and Evidence

The repository for most official campus data is the Office of Planning and Budget, which houses the units of Budget and Resource Management, Capital Planning and Space Management, Data Management, and IRAPS. Staff in the Office of Planning and Budget conduct policy outcomes and planning analyses that directly support the Chancellor, CP/EVC, and planners at all other levels of the campus. (CFRs 4.1, 4.2, 4.3)

**Upgrading of campus data systems**. At the last WASC review, the campus was dealing with aging data systems and limited integration of data from different systems that impaired the effective sharing of data. We have continued to invest resources toward improving the accessibility, consistency, reliability, and security of institutional data. Complex analyses that cross subject areas have become easier to complete as a result of these investments, and broader collaborations between IRAPS and academic units across campus has resulted.

UC Santa Cruz continues to effectively utilize the Campus Data Warehouse, which is administered by the Data Management unit. Data are received from an increasing variety of campus data systems including financial, budget, personnel, student information, course audit, facilities, procurement, and advancement/gifts. This system allows staff to access and integrate information from various source

systems for analysis and decision-making. Data Management provides a high level of support to staff at all levels of the campus in the form of regular trainings and individual assistance, and provides standard certified reports.

**Collection, dissemination, and use of institutional research data**. IRAPS is the primary office for the collection and analysis of statistical information regarding students, faculty, and staff. IRAPS is the core unit for support of PLO assessment and, in collaboration with Budget and Resource Management, provides data used to support internal and external reviews of academic programs.

IRAPS produces a number of standard reports that are distributed to campus constituents and posted online, including information on student enrollments, admissions statistics, student retention and graduation, faculty workload, course audits, results of student surveys, and assessment of PLOs.

For departments undergoing APR, full analyses of the Graduate Student Survey and the University of California Undergraduate Experience Survey (UCUES) are provided by IRAPS. Graduate students are surveyed every two years and asked to evaluate their program/department as well as other aspects of their graduate student experience. UCUES is an annual survey of undergraduates and part of a UC-wide collaborative survey.

# Essay 7. Sustainability: Financial Viability; Preparing for the Changing Higher Education Environment

## Overview

Two key planning issues somewhat unique to UC Santa Cruz are related to our aspirational growth and development have been discussed in previous accreditation reports:

1. Planning for growth in graduate education and research while sustaining undergraduate excellence, and

2. Continuing to evolve our organizational structures to support planned growth and development.

Four other challenges are related to issues common to all California research institutions and represent fundamental changes facing higher education in the decade to come:

3. Adapting our programs and support services to respond to a changing California student demographic,

4. Adapting to an increasingly difficult fiscal environment of declining State support,

5. Increasing use of new technologies in teaching and learning, and

6. Leveraging our global reach.

Sustaining improvement in each of these areas requires ongoing leadership attention and progress must be viewed against the backdrop of a constantly changing external environment. Accordingly, the campus has invested in its capability to assess its progress and make data-informed decisions.

## Planning for growth

In its January 2011 response to our interim report, WASC noted UC Santa Cruz's undergraduate enrollment grew by 28 percent (to nearly 15,000 students), graduate enrollment increased by 31.5 percent (to about 1,450 students), a number of new graduate programs had been approved, and contracts and grants activity had grown substantially. In the context of an environment of State budget cuts, the panel encouraged the campus to further explore "the issue of balancing undergraduate and graduate growth in a way that serves the mission and promotes excellence at both levels."

Leadership across the campus has thought deeply about growth and how to implement it in a balanced manner. The campus has (i) reaffirmed its commitment to enhancing undergraduate student experiences through investment in our colleges, experiential learning, and campus life and leadership development, and (ii) stated its intention to expand graduate enrollments. In addition, the campus has developed plans to accomplish these goals in a realistic and balanced way that achieves our education and research mission. (CFR 4.6)

**Undergraduate enrollment**. Through 2020, the campus plans modest growth in undergraduate enrollment. As part of this plan, we are increasing the proportion of community college transfer students to help maintain access under the Master Plan for Higher Education in California. The campus is currently over-enrolled relative to funded California resident undergraduates due to State fiscal constraints and recent surges in applicant interest that resulted in larger-than-expected frosh classes. Over this planning period, UC Santa Cruz is returning California resident enrollment to budgeted levels and increasing the size of its domestic and international non-resident cohorts.

In order to maintain and enhance the quality of our undergraduate educational experience, the campus has developed coordinated approaches to student success. The *Division of Undergraduate Education* is entering its third year as a comprehensive academic unit enhancing community and scholarship with a focus on the campus's distinctive college experiences, and on deeper student engagement though research, study abroad, and service learning. The *Division of Student Services* sponsors a number of complementary student-initiated outreach and retention programs. One such program is *Engaging Education*, which offers access to a lending library, classes, computers, and peer advising from student staff. These initiatives provide venues for undergraduates to develop a greater sense of belonging and engagement through programs to learn and organize around issues of social justice, student power, and community. (CFRs 2.10, 2.13)

An Undergraduate Research Coordinator assists students in finding opportunities to participate in research and scholarly activity across campus by maintaining a research opportunity database. On-going efforts based on the comprehensive work of the campus Success Team include the first-year honors program, the UC Santa Cruz Challenge Program, and a number of initiatives designed to enhance student success. (CFR 2.8)

More broadly, under the direction of the faculty special assistant, the campus has initiated a comprehensive, multi-faceted set of initiatives designed to address student success, undergraduate completion rates, and time to degree. Outcomes associated with these initiatives are discussed in Essay 5. (CFR 2.13)

**Graduate enrollment**. Graduate education is a central focus of campus planning. Significant graduate enrollment growth is planned with a target ratio of 12 percent doctoral to undergraduate enrollments (from 7.3 percent in 2014-15), strategic master's program development, and enriched links between undergraduate and graduate education. The needs of graduate programs receive high priority in multi-year financial strategies, and major decisions are evaluated with respect to their potential impact on graduate training and outcomes. In order to support the graduate growth aspirations, the campus is focusing on the following:

- *Resource allocation*. The campus has revised resource allocation models to provide deans and departments with flexible resources to invest in doctoral program growth. Examples include (i) increasing the number of graduate fellowships and (ii) a revenue sharing program to create program-level flexibility to improve research and instructional capacity, enrich curriculum, and enhance collaborations with regional industry and the public sector. Funding has increased for teaching assistants and graduate student instructors to create more support for graduate students that also strengthens ties to the undergraduate experience.

- *Faculty hiring*. After several years in which faculty separations exceeded new hires (due to severe State budget cuts), the campus has reallocated and prioritized available resources to restore funding for faculty positions and increase the number of faculty. Priority is given where there is potential to grow graduate programs and significantly enhance the campus's research profile.

- *Graduate student support services*. In addition to planning for financial support needs, the campus has evaluated the need for services. Regular student opinion surveys identified three areas requiring additional attention: Teaching Assistant training, professional development, and student voice practices (e.g., including graduate student opinions in departmental decision-making). Initiatives in each of these areas are in place, for example, a Graduate Leadership Certificate Program has been implemented to improve professional development. (CFR 2.13)

# Evolving organizational structures

WASC noted in its January 2011 response to our interim report that UC Santa Cruz has effectuated plans to separate the administrative roles of the Vice Chancellor for Research and the Vice Provost/Dean of Graduate Studies to more fully support our graduate growth and research aspirations. The panel also encouraged the campus to further explore needed organizational structures and leadership roles to support planned growth and development. (CFRs 3.6, 3.7)

An additional organization change has been a significant realignment of student services administrative and student-support units in order to streamline the delivery of services to students in an era of diminished resources and to better align student affairs functions with undergraduate academic priorities:

- College advising and undergraduate enrollment management activities within the Office of Admissions, Registrar's Office, and Financial Aid Office report to the Vice Provost/Dean of Undergraduate Education;

- Student health services, retention services, judicial affairs, and many student engagement services operate under the oversight of the Associate Vice Chancellor/Dean of Students; and

- College housing, dining and the campus bookstore operate in the Division of Business and Administrative Services.

Similarly, the campus has evolved its organization and consultation processes to better support overarching goals such as furthering the cultural and social diversity of the campus community and cultivating an inclusive campus climate. The Office for Diversity, Equity, and Inclusion was established in 2010, and the campus has a broad-based Advisory Council on Campus Climate, Culture and Inclusion that includes faculty, staff, students, community members, and alumni, and reports directly to the Chancellor.

These reorganizations of campus administrative roles better position the campus to support undergraduate enrollment growth while sustaining the quality of the educational experience and improving student success, to support expansion of graduate programs and enrollment growth, and for realizing significant increases in the levels of research and scholarly activity.

# Adapting to a changing California student demographic

UC Santa Cruz is committed to providing access to a student body that reflects the increasingly diverse California and U.S. populations. Our student population is increasingly diverse in multiple dimensions, as described in Essay 1. The campus joined the Hispanic Association of Colleges & Universities (HACU) in May 2013, based on exceeding 25 percent Hispanic enrollments in fall 2012. The campus has programs and resources that support the Hispanic student community, including academic support, scholarships and financial guidance, and social events. The retention and graduation rates for Hispanic/Latino students meet or exceed overall campus rates (see Essay 5). (CFRs 1.4, 2.10, 4.7)

Our approaches to teaching, learning, and student services continue to become more flexible and responsive than ever. One- to three-day new student summer orientation programs promote scholarly and social opportunities that contribute to academic and personal success; international frosh have a 10-day orientation. Student initiated outreach programs assist in recruitment, and provide peer communities and access to cultural and educational resources once students arrive on campus. To support continued success, campus initiatives are underway that include new tools that measure progress in completing degree requirements and that help maximize the portion of students declaring and completing their majors in normative time. Capacity for advising and enrollment analysis and targeted student success information has expanded. To regularly identify and assess student concerns,

the campus surveys students about academic experience, student life, and personal development. Survey results are used to monitor and evaluate campus progress and to inform priorities for existing programs and new initiatives. (CFRs 2.10, 2.11, 4.7)

# Ensuring fiscal viability

Due to several State budget crises prompting cuts with minimal reinvestments from the State (since the early 1990s), UC has seen an overall decrease in State funding (Figure 7.1; University of California 2014-15 Budget for Current Operations, page S12).

Figure 3. Per-Student Average Expenditures for Education (2012-13 Dollars).



Average inflation-adjusted resources per general campus student. Excludes financial aid.
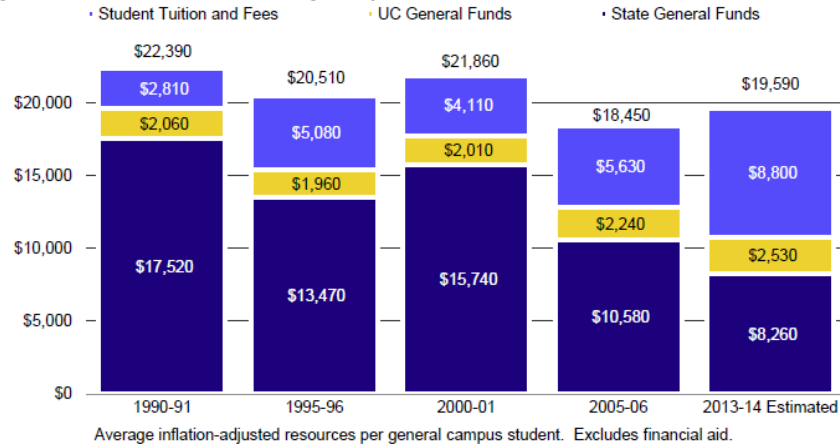
Tuition increases have only partially offset State budget cuts to UC. Hence, the campus leadership has needed to implement difficult decisions to make cuts and constrain costs. The financial indicators in the campus's annual reports demonstrate that UC Santa Cruz remains fiscally solvent and has avoided an overall structural deficit despite years of State disinvestment and fiscal upheaval.

The campus's strategies for building a sustainable future involves an integrated and synergistic investment in three efforts.

1. **Ensure that UC system-wide allocation formulas are equitable, transparent, and address inequities in campus base budgets that have compounded over time**. Historically, State, tuition, and fee revenues that comprise core educational budgets were allocated by the UC Office of the President to campuses in proportion to their base budgets, which led to significant differences in per-student funding across campuses. UC Santa Cruz campus leadership, working collaboratively with colleagues at the Office of the President, the system-wide Academic Senate, and leadership at other UC campuses worked toward new UC allocation formulas that (i) re-based campus budgets to equalize the weighted per-student State funding, (ii) provided each campus the resources to enroll doctoral students equivalent to 12 percent of its undergraduate study body, and (iii) allowed each campus to retain all revenues it generated including tuition and fee revenue.

   This redistribution of core funding is occurring over a six-year period which started in 2012-13. The campus has invested this new funding in restoring faculty positions that were cut as State resources diminished, growing doctoral enrollments, and re-investing in infrastructure to sustain academic programs and services. The campus is restoring 16 positions per year over a six-year period.

2. **Diversify the campus's resource base and actively pursue new sources of funds**. Simply redistributing UC-wide resources is not sufficient. Four areas comprise our emphasis for increasing resource flexibility needed to sustain excellence:

- *Non-resident student enrollments.* The campus is working to significantly increase the proportion of non-resident undergraduate and graduate student enrollment to the UC-wide norms. To achieve these increases, the campus has increased its recruiting efforts, including engaging faculty who travel in support of their research. Non-resident undergraduate applications for fall 2014 increased sharply to all-time highs, up 45.9 percent to 3,619 from international students and up 28.7 percent to 2,536 from domestic out-of-state students. Graduate student non-resident enrollments have been growing at an average annual rate of 3 percent for the last five years. This goal is aligned with efforts to increase our national and international presence and increase diversity to broaden student perspectives and experiences.

- *Summer Session enrollments.* UC Santa Cruz plans to increase summer enrollment, which provides an enhanced revenue source. Actions taken have include streamlining approval policies and revising allocation methodologies to substantially broaden the summer curriculum. Summer Session offerings provide teaching experience and financial support for graduate students and additional offerings of essential courses needed by undergraduates to maintain or accelerate progress toward graduation.

- *Extramural research activity.* UC Santa Cruz is working to increase research activity and extramural funding by 33 percent within five years. Despite reductions in Federal support for research institutions nationwide, the UC Santa Cruz grants and contracts have exceeded $100 million for eight consecutive years (over $132 million in 2012-13). The campus has made substantial investments in research infrastructure, made improvements to grants administration, streamlined research compliance administration, and increased support for interdisciplinary and large proposal development and management. In 2013-14, new initiatives for facilitating technology transfer and industry/university collaborations were set in motion by the Office of Research, and the campus invested in academic analytics tools to identify new research opportunities. Increasing research activity will provide additional opportunities for undergraduates to participate in research as part of their educational experience, provide support for doctoral growth, and will allow administrative and support costs to be spread over a larger base of operations.

- *Philanthropy.* In July 2009, UC Santa Cruz launched its first comprehensive fund raising campaign to raise $300 million to support students, research activities, other academic programs, and campus facilities. The campaign's priorities include specific capital projects and signature initiatives. Since the launch of the campaign, the campus has seen a doubling of the annual flow of philanthropy (from $20M to $41M). New planned gifts total $32M since the start of the campaign. As of June 30, 2014 the campaign total had reached $180M toward its $300 million goal. This effort to establish a culture of philanthropy across the campus and to develop models for public-private partnerships will serve UC Santa Cruz well. UC Santa Cruz is a young campus, and roughly half of all alumni have graduated in the past 15 years. It will take more time for our alumni body to mature and to better establish a culture of giving back to the university.

3. **Continue to reduce costs.** As is true at campuses across the nation, costs have increased at UC Santa Cruz at a greater rate than that for goods and services in other segments of the economy. While recent State budgets have included small general increases for UC, tuition has not been raised for the last three years. The State budget increases alone have not provided sufficient funding to cover mandatory costs (e.g., retirement liabilities). As a result, the University must continue to achieve cost reductions. Among the campus actions are:

- *Workforce reductions.* UC Santa Cruz has stayed current with State budget reductions and in meeting its mandatory costs and obligations. Many of the reductions in staffing were accomplished through attrition and consolidation. While these reductions have served to

stabilize campus budgets, UC Santa Cruz is also re-investing in its academic programs, including deferred instructional positions in order to sustain its academic future.  Current allocation priorities include restoring funding for teaching assistants, graduate student support, and faculty hiring.

- *Operational efficiencies in administrative and support services*.  UC Santa Cruz has been a leader in efforts to improve efficiencies. Starting with restructuring information technologies services and consolidating business and human resources operations in 2005-06, we have implemented new support technologies in on-line purchasing, human resources management, and time and attendance reporting that have reduced costs while increases in enrollment and research activity have occurred.

- *Curricular efficiency.* To help shift the cost curve while ensuring that curricular offerings enable students to graduate in a timely manner, the campus has focused on curricular efficiency.  For example, the faculty completed a pilot curriculum mapping project designed to help faculty visualize how undergraduate students fulfill their major requirements, where bottlenecks and/or potentially unnecessary duplication may exist in the curriculum, and whether there are curricular impediments to graduating in normative time. As described in Essay 5, campus leadership has defined a series of initiatives and strategies that will improve information for students and advisors to improve student success. Using similar methodologies, faculty in the Division of Physical and Biological Sciences have reviewed and updated their curriculum, sometimes altering course pedagogy to streamline offerings, approach learning in new ways, and achieve cost savings.  Likewise, the School of Engineering regularly updates their "curriculum charts" to aid in undergraduate advising. (CFRs 2.12, 4.4)

# New technologies in teaching and learning

Advances in technology continue to drive change in universities throughout the world, impacting teaching, learning, research, service, library collections, and the student experience.  UC Santa Cruz has been actively involved in examining and utilizing new technologies in all aspects of campus operations with faculty, staff, and students actively participating in these efforts.  Providing support to faculty, teaching assistants, and instructional support staff, the campus operates an integrated academic technology support unit, the Faculty Instructional Technology Center (FITC).  As part of a 2006-08 expansion and renovation of the McHenry Library, FITC was moved to an expanded suite of newly-constructed flexible learning spaces that support instructional innovations in teaching and collaboration. These spaces offer faculty and students active learning opportunities in moveable classroom spaces with built-in webcast functionality for streaming or archiving.  FITC regularly offers workshops, faculty seminar series, and "faculty Fridays" brown-bag lunch discussions. (CFR 4.7)

In addition, the faculty senate Committee on Teaching has organized events about new technologies in teaching and learning, such as the "*Future of the Curriculum*" and "*So you think your lecture course is better than a MOOC?*"  The Committee on Educational Policy has created applicable guidelines and revised the course approval process to streamline the delivery of online courses.  The Vice Provost for Academic Affairs oversees the campus's efforts to ensure a coordinated approach that is sustainable and consistent with overarching campus goals. Efforts are also coordinated with UC-wide initiatives.

Our students tell us that they elect to come to Santa Cruz because they want access to research-active faculty, that they find interacting with a diverse set of peers enhances their own understanding, and that participating in co-curricular opportunities helps advance their career goals.  Coming to a research university only to take completely online courses will not meet their educational objectives.  On the other hand, many do want access to a partially online curriculum to supplement their classroom experience. (CFR 1.2)

The campus's online efforts are designed to complement and enrich traditional teaching. For example, as part of a "blended learning" approach being used by faculty (also known as "flipped classroom"), students are asked to view online lectures, explore interactive models and simulations, and interact with their peers using collaboration technologies prior to coming to classroom sessions. The classroom sessions are then used to explore concepts in more depth and to engage with instructors one-on-one and in groups. Faculty report two primary advantages of this approach. First, the asynchronous nature of online curriculum allows greater flexibility for students to master course concepts, including the ability to repeat presentations. Second, blended classes allow for increased active learning in the classroom, which has been shown to improve student learning. (CFR 4.4)

It takes substantial effort to create a UC-quality online course, but we see significant potential to provide value for students, particularly in the case of large introductory courses. The campus's development of its fully online "*Calculus for Science, Engineering, and Mathematics: Math 19A*" course serves as one case study of what is possible. Our faculty developed video lectures, created interactive homework assignments, and leveraged available online collaboration tools and an electronic textbook.

Over the next decade, UC Santa Cruz will continue to monitor the success of our online initiatives and those at peer institutions through the dual lens of our strong tradition of high-quality instruction and our goal to expand access. Our ability to adapt and innovate is well positioned by our participation with *Coursera* and the UC-wide Innovative Learning Technology Initiative, and our faculty's constructive pedagogical innovations in the traditional classroom.

## Leveraging our global reach

In an increasingly global society, it is incumbent upon research universities to adopt an international profile and perspective. To be competitive, UC Santa Cruz is acting in three key areas. First, we have established a goal of increasing national and international students, which will enhance the vitality of our learning environment, enabling all of our students — domestic and international — to be better prepared to live, work, and prosper in our global community.

Second, the campus is working to expand the opportunities for undergraduates to study abroad. Interest in studying abroad has been steadily increasing over the past five years with approximately 3.5 percent of the undergraduate students participating in the UC-wide Education Abroad Program. The campus has developed financial models to allow the program to scale and provide additional financial assistance to students in need.

Finally, we are seeking to enhance international research collaborations in a number of key areas. As an example of current activities, Santa Cruz's genome research has fostered international collaboration to build a comprehensive encyclopedia on DNA elements. Active international collaborations, such as those in renewable energy and climate change, ocean science, and high-energy physics, provide funding for scientists and graduate students working at research stations around the world.

These actions to strengthen international relationships benefit the campus in three key ways: (i) faculty enjoy greater opportunities for research and scholarly engagement with peers around the world; (ii) more robust student-exchange programs enable our students to experience the world as global citizens; and (iii) enrolling more nonresident students enhances diversity on campus and brings additional revenues. The campus has therefore made it a priority to expand UC Santa Cruz's presence and engagement on the global stage, building our profile in ways that will foster research collaborations and student exchange opportunities.

# Looking forward

Looking to the future, UC Santa Cruz will continue to be recognized nationally for its leadership in transforming the educational experience. This ongoing impact on the ecology of higher education comes from UC Santa Cruz's core values, including the centrality of research and a research-active faculty; the importance of graduate education to our identity as a public research institution; a commitment to providing a transformative undergraduate educational experience; social and environmental responsibility, including a focus on sustainability and a tradition of innovation in pursuit of solutions to society's critical challenges; and diversity, equity, and inclusion, aligned with our campus principles of community.

We have confidence in our ability to adapt to the future because we have organized for and developed tools to sustain improvements related to the six key issues discussed in this essay; because we have invested in our capability to assess progress and to make data-informed decisions; and because we make it a priority to attract, hire, support, and retain world-class students, faculty, and staff.

# Essay 8.  Conclusion: Reflection and Plans for Improvement

## Reflection

The 2015 WASC reaccreditation process coincided with other key planning activities at UC Santa Cruz:

- Multi-year budget planning/priority setting needed to respond to a State fiscal crisis that saw the UC system lose the equivalent of $1.8 billion in State support;

- A pivotal campus initiative to strengthen graduate education and research, including doctoral growth to 12 percent, strategic master's program development, greater internationalization of graduate recruitment and training, and enriched links between undergraduate and graduate education;

- Our first comprehensive fund raising campaign to strengthen UC Santa Cruz's impact in core areas that define the campus: extraordinary undergraduate experience, high-impact research, and leadership and commitment to environmental and social responsibility; and

- A comprehensive, highly collaborative strategic planning process, *Envision UCSC*, to help create a unified vision for the campus's future.

Common to each of these activities was a need to clarify our vision and sharpen our focus on what UC Santa Cruz uniquely contributes to higher education. These activities provided evidence that UC Santa Cruz has strong academic programs, an outstanding and diverse faculty, and excellent students.

## Plans for improvement

UC Santa Cruz continues to be an incubator for new ways of thinking, learning, and taking action in the world. To continue to thrive, however, there are key challenges to which we must adapt and key investments we must make in order to anticipate and prepare for the future.  Our near-term improvement plans include four key foci. (CFR 4.6)

1. Between now and 2020, UC Santa Cruz will implement and assess the outcomes associated with the strategies identified in our strategic planning process, *Envision UCSC*. These six strategies represent both a reaffirmation of our mission and core values and an action plan of tangible steps we will take to build upon our legacy of achievement and excellence:

    i. Academic planning — establish an academic planning process for the strategic allocation of resources;

    ii. Research infrastructure — establish the support infrastructure required to further propel UC Santa Cruz's research distinction and productivity;

    iii. Student success — advance student success;

    iv. Employee Engagement — create a climate for employees that reflects the excellence of our campus and the quality of our staff;

    v. Balanced operations — optimally balance process efficiency and effectiveness, institutional risk, and process cost; and

    vi. Identity and reputation — strengthen our identity and broaden our reputation.

    The *Envision UCSC* process itself illustrates UC Santa Cruz's commitment to campus-wide engagement and to strategic improvement.  The outcomes associated with the first three goals

contribute directly to the issues and challenges discussed in our essays and represent forward-looking actions the campus is taking as part of its commitment to institutional improvement. While these goals demonstrate specific alignments between the campus's priorities and WASC's quality improvement aims, the remaining three goals illustrate UC Santa Cruz's comprehensive approach in addressing educational issues — ultimately, workplace morale, support operations, and the campus' identity and reputation all contribute to quality student outcomes.

2. The campus intends to build substantially on its assessment foundation. All programs have defined PLOs and faculty have created rubrics and approaches for gathering evidence of learning. Some have analyzed and interpreted that evidence for one or more PLOs and have begun to use this information to improve student learning, and the rest will be doing so by summer 2015.

   The campus has taken a thoughtful and deliberate pathway with respect to building ongoing, iterative assessment practices. Our path forward builds upon our faculty's long tradition of commitment to student learning, curricular improvement, and a distinctive student experience. We have institutionalized a process in which annual PLO assessment reports inform and promote our continuous improvement efforts. A discussion of PLOs is now a formal part of our external academic program review process and we have re-focused a portion of our institutional research capacity into direct assistance to faculty in articulating PLOs, developing evaluation rubrics and assessment plans, collecting and analyzing assessment evidence, and preparing annual reports.

3. The campus continues to enhance and extend its decision support capabilities. Already recognized as a "best practice" among our peers, the campus's data warehouse (encompassing institutional research, enrollment and student data, financial, space and facilities utilization, and payroll and personnel) serves decision-makers across campus as a robust source of data for assessment, analysis, and reporting. In 2013, we added academic analytics capability that includes comparative research and publication/citation information on all US higher education research institutions; we are using this to analyze our research impact and to identify new opportunities for collaboration and increased extramural support.

4. UC Santa Cruz is leveraging the fact that we are a part of the UC system, building excellence by contributing to UC's world-class research assets and operating more cost-effectively by continuing to participate in UC-wide efficiency efforts. UC Santa Cruz is a full partner in building world-class UC research assets, such as the *California Institutes for Science and Innovation* (we are a full research partner in two of the four institutes, QB3 and CITRIS), and UC Observatories (fulfilling both a key role in the management of Lick Observatory and in contributing to the research of the Thirty Meter Telescope). The campus's academic infrastructure benefits significantly from the *California Digital Library*. In addition, the campus is a contributing partner in UC-wide efficiency initiatives such as *CENIC* (providing Internet connectivity and advanced services to educational and research institutions State-wide), *UC Path* (UC's new human resources management system), and "working smarter" initiatives such as electronic procurement systems for goods and services and UC-wide purchases of wholesale energy.

We believe that with these plans for improvement, our outstanding faculty and staff will be able to position the campus to move forward its vision to serve California and the world as a top-ranked research university and a leading institution for the education of students.

## Conclusion

Preparing these essays for the WASC reaccreditation process has given us an opportunity to reflect as a campus on our university's strengths, accomplishments, and goals.  It has also been an opportunity to celebrate key areas of exemplary institutional performance and focus our ongoing discussions about maintaining and improving UC Santa Cruz's standards of excellence.

We look forward to engaging with WASC reviewers and demonstrating our progress at the fall 2015 onsite review.