

Working Group Charter:

The Academics and Research Working Group will discuss proposed enrollment and planning horizon, and identify the potential challenges and opportunities associated. Members will be challenged to explore ways to balance and accommodate student growth and research growth at UCR, as well as to help identify what some characteristics of future growth may be, and how those characteristics will influence physical planning decisions. In particular the group should review and discuss any major changes in the delivery of instruction over time, including use of technology and/or any anticipated major changes in the enrollment mix that exists now.

VISION & IMPLEMENTATION

In 2035, what does UCR look like with respect to Academics and Research?

Vision Statement 1: The workgroup envisions that UCR could reach a total enrollment of 35,000 students by 2035, including 20% graduate students.

The workgroup considered the current enrollment planning model that would bring the campus to 35,000 students in 2035 and found the underlying assumptions to be reasonable.

We also considered campus enrollment trends during the past 18 years, going back to fall 2000 when we had only 13,000 students on campus. During this time, the campus added on average 538 net new students each year. Projecting this linear growth out over the next 17 years to 2035 implies an enrollment of 33,000 students—very close to the planning model.

The workgroup is supportive of growing graduate enrollment at a greater rate than overall enrollment, and feels that it is feasible to achieve 20% graduate students by 2035. Graduate students are currently 14% of total enrollment, with PhDs comprising around 9% of this total. While the proportion of PhDs is similar to that at other UC campuses, our proportion of Masters students is much smaller. Future PhD enrollments would scale with faculty growth which planning models suggest would be roughly proportional to overall student growth.¹ Thus there would need to be significant growth in Masters students to achieve the 20% figure.² The desire to grow graduate enrollments, and Masters enrollments

¹ This assumes our programs are able to make competitive offers to admitted PhD students. Currently there is some concern about the overall funding levels and the components of the packages (e.g. fellowships vs. TAships).

² Most committee members are supportive of realizing some of this growth through fully online programs. Others are concerned about potential impacts on the student experience and the perceived value of our degrees. The committee did not engage at length on this topic but feels it merits further discussion. Decisions to put programs online would need the support of the program faculty.

in particular, has been discussed since at least the last strategic planning effort in 2010 but little progress has been made. A more determined effort will be needed that may require new incentives (such as directing sufficient revenues back to the programs that generated them).

Overall, the workgroup feels that a campus of 35,000 students by 2035, including 20% graduate students, is reasonable, provided the campus creates an environment in which faculty feel incentivized to grow Masters programs. However, there is one factor worth mentioning that could act as a brake on this growth. Workgroup members feel that the campus is currently very tight on space. The data that have been surfaced as part of this LRDP effort support this assertion. Because of this, campus growth may be constrained in the near term while new facilities are built. Moreover, state support for capital projects has been limited, and UCR is not yet able to fundraise in a way to support campus development entirely with private donations. And public-private partnerships may not well-suited for all types of building projects that the campus will need to undertake. To the extent this will continue to be our capital planning environment for the foreseeable future – i.e., scarce public resources must precede growth because of existing capacity and fundraising constraints – then this could limit growth and reduce our eventual 2035 enrollment.

Vision Statement 2: The workgroup envisions a campus in 2035 that has cultivated programs already known to have growth potential. We do not see signs of impending shifts in the campus’ academic program portfolio that would have significant implications for space planning.

The workgroup is unable to divine what will be the next big areas of research or instruction that will emerge between now and 2035. Input from the deans was consistent with this, with none of them anticipating significant changes in current trajectories. The deans of BCOE, Business and CNAS report that they anticipate future growth will be limited only by their available resources, and the workgroup generally concurs.

The workgroup also considered college-level enrollment projections to 2035 (table), and generally found these to be consistent with the deans’ input. Most of our already-large units are projected to grow at around the campus rate, while growth rates for smaller programs are projected to have more variability. CNAS is a noteworthy exception—it is the second-largest academic unit but is projected to grow at only 33% compared to the campus rate of 46%. The workgroup does not anticipate that the campus would open any additional schools during the planning horizon.

College Enrollment Projections: 2018-35

	2018	2035	change
Campus	23922	35009	46%
BCOE	3375	5156	53%
Business	1504	2106	40%
CHASS	11025	16394	49%
CNAS	7060	9410	33%

	458	1177	157%
SOM	273	347	27%
SPP	227	418	84%

Based on input from the deans and our own discussions and consideration of our comparative advantages, we feel that the following are likely to be growth areas: computer science and engineering (including big data, cybersecurity, artificial intelligence/machine learning, sensor networks), mechanical engineering (including automation/robotics), business, agricultural sciences (including plant sciences, pest management, genomics, food production, precision agriculture, cannabis research), air quality and related health effects, biotechnology, transportation and logistics, renewable energy and energy storage, materials science, climate science, health care in underserved communities, aging and social sciences (including migration, poverty, social justice/change).

The significant presence of agricultural sciences on this list means that the campus should view our agricultural land as an asset of appreciating value in its current use as “outdoor laboratory space.” Thus we should have a bias towards preserving these lands. However, the campus also must have a process for evaluating unique opportunities that will arise for allocating some of this land to other uses. The best recent example is CARB. The workgroup feels that the current plan to preserve land south of MLK exclusively for agricultural use is sufficient for the near term, but could prove to be a constraint as the campus adds more faculty if land north of MLK is put to other uses. It would be wise to develop a strategy for addressing this constraint, which likely would involve purchasing land away from campus. Understanding which sites would be most preferred, and monitoring the availability of these sites would seem prudent.

Regarding off-campus activities, whether agricultural or otherwise, the workgroup feels that it is essential to integrate these locations into the main campus as much as possible. This means making it easy for faculty, staff and students to move back and forth to the main campus. One implication of this is parking/transportation – more offsite locations means greater demand for partial-day visits to campus, which should be facilitated to foster greater interaction.

Vision Statement 3: The workgroup envisions that UCR will not only grow our faculty and staff but also improve our faculty/staff/student ratios by 2035.

The workgroup considered that our faculty would grow from 841 up to 1228 or 1285 depending on whether or not the student:faculty ratio is decreased to the UC average. This amounts to a small difference in projected growth, and so the workgroup feels we should plan to bring our student:faculty ratio in line with the UC average by aspiring to 1285 faculty. Regardless, this is a large number of faculty to add to our campus. These faculty would of course need offices and research space, as well as start-up funds. Given we have added a large number of faculty lately, and have seen our resources available for adding more diminish accordingly, the workgroup expects that the immediate future likely entails a slower growth rate while we renovate and build quality space and accumulate financial resources.

The workgroup also considered the projected increases in staffing that would be needed to achieve proportional growth (from 3037 up to 4434, or a 46% increase) and that would also bring the student:staff ratio down to the UC average (from 3037 up to 5607, or an 85% increase). In this case, we

felt that an 85% increase (which would amount to 130 net new staff each year) is not achievable. This is unfortunate because we feel that our current level of understaffing means that our staff are under a lot of stress and are unable to provide an equivalent scope of administrative services compared to other UC campuses and our aspirational peer group. Important examples include student advising, support for large multi-disciplinary and/or multi-campus grants, and support for shared research equipment and facilities. The workgroup feels that we should plan for staffing levels around 5000 in 2035 (a 65% increase), in order to provide some relief and increase scope of services. Ideally these new staff would be located near the faculty and students they serve, as our recent experience in locating staff away from the units they support has generally not been positive.

Vision Statement 4: The workgroup envisions a residential campus in 2035 that makes greater use of online and hybrid pedagogy.

The workgroup discussed the extent to which the campus might utilize more online pedagogy, and considered whether our students might take up to 25% of their total credit hours (roughly one course per student per term, on average) online by 2035. Most workgroup members, including our student representative, felt that 25% is too high. Others noted that very large lectures don’t actually provide the benefits of “face-to-face” classes, that online courses also allow greater scheduling flexibility and less commuting, and that hybrid or blended courses might offer a good compromise. There was general agreement that future online courses would mainly be large lower-division breadth courses, and also that online pedagogy would help with tight classroom space. On the other hand, because we are not envisioning large numbers of fully online students (i.e. those who pursue fully online degree programs), these students will still require other types of campus space (e.g. parking, dining, etc.). The workgroup was specifically asked to consider whether 5-10% of total credit hours taken online might be a better planning envelope, and the members generally agreed that 10% seems like a reasonable envelope (which would accommodate one course per student per year, on average).

Vision Statement 5: The workgroup envisions UCR will have higher research productivity and research expenditures nearer the higher end of the current range of projections by 2035.

The workgroup considered a range of projections provided by RED and FP&A for direct research expenditure growth through 2035 (table). As benchmarks we also considered linear projections of the most recent 5 and 10 years of data.

Direct Research Expenditure Projections: 2018-35

	2018	2035	change
Low growth scenario	\$96M	\$147M	53%
Medium growth scenario	\$96M	\$181M	88%
High growth scenario	\$96M	\$197M	105%
Linear projection: 10 year trend	\$96M	\$141M	47%
Linear projection: 5 year trend	\$96M	\$188M	96%

The low growth scenario corresponds to growth in research that is proportional to faculty growth, assuming the student:faculty ratio is decreased to the UC average. The medium and high scenarios imply growth in research productivity, as well. Although the high growth scenario seems very high, it is actually only slightly above the expenditure growth rate we have seen over the past 5 years. The workgroup feels that maintaining this growth rate is achievable, especially if UCR (1) creates additional incentives for faculty to write grants (such as more closely linking research space allocations to grant funding, or offering teaching releases for PIs on large multi-investigator/center/training grant proposals); (2) provides additional staff expertise to support submitting and administering large grants and maintaining core/shared equipment and facilities; (3) provides and maintains more high-quality core facilities; and (4) renovates and upgrades research space that is currently of insufficient quality. All of these actions would tend to improve research productivity, and thus would significantly decrease the amount of research space that is needed to accommodate nearly 1300 faculty spending almost \$190M annually in 2035. Given our recent 5-year trajectory, the workgroup feels that research space planning should be driven more by the anticipated/desired growth rate for faculty than for research expenditures.

Vision Statement 6: The workgroup envisions an increasingly dense East Campus through 2035.

The workgroup considered the “campus opportunity map” and the three conceptual plans for 2035, and provides the following input:

1. We should continue to increase the density of the east campus / campus core. This helps increase interdisciplinary interaction and leverages existing services rather than having to extend services to new areas. New construction should be limited to 4 -5 stories to preserve the aesthetics of the campus and reduce construction costs.
2. The strategy to convert parking lots to structures and to use the remaining land for buildings has broad support. We should accelerate this trend as much as possible.
3. Locating recreation opportunities near student housing is desirable. Off-campus recreation field development, if necessary, might be pursued in partnership with the City of Riverside.
4. The workgroup is very supportive of graduate student housing on the “toe of the hill.”
5. Any instructional activities on the west side should be located as close to the east side as possible, to minimize travel time. If these activities are pushed further west, a new sustainable transit service should be considered (ideally one that takes advantage of the latest transportation technologies).
6. The workgroup was generally supportive of more development and neighborhood improvement along University Avenue.
7. There is support for acquiring and repurposing the commercial properties (strip malls) to the immediate east and north of the campus.
8. Generally, the committee found appealing elements of all three conceptual plans and thinks that a combination of these plans might be best.



KPA	WORKING GROUP'S RESPONSE
<i>Enrollment and Planning Horizon</i>	
35,000 in 2035	See Vision Statement 1 above.
<i>East Campus</i>	
Increase density of the core campus; could include removal of older buildings	See Vision Statement 6 above. The workgroup understands that Watkins and Spieth have been identified as desirable to preserve because they contribute to the architectural character of the campus. No members expressed support for preserving these buildings for this reason. One member suggested that perhaps part of each might be preserved, while repurposing the remainder of the footprint (if feasible). All members agree with the principle of assessing campus opinion about each building before deciding whether to preserve. Members felt that replacing buildings such as Boyden Lab, Fawcett Lab, the old EHS building, University Office and University Lab buildings, the old headhouse storage buildings and several facilities services annex buildings that should be relocated to the outskirts, would free up space for classroom buildings, offices, and research space in the campus core.
South District – hillside development of campus-owned land.	See Vision Statement 6 above, especially #4. Some workgroup members also feel that increased visibility of the campus along the freeway could be beneficial.
South District- professional schools location?	Workgroup members are in agreement that it would be preferable to integrate professional schools into the campus rather than locate them on the outskirts. This likely would be preferable for professional students, as well, and moreover would leverage existing campus services (e.g. transportation, dining) and reduce the need to establish these services elsewhere on campus. Workgroup members are supportive of locating graduate student housing--including family housing--in the south district, and see synergies with nearby research activity.
<i>West Campus North of MLK</i>	

<p>Appropriate land uses – potentially complementary to CARB</p>	<p>See Vision Statement 2 above.</p> <p>The workgroup discussed how West Campus developments such as CARB not only occupy “outdoor laboratory space” but also tend to create research synergies that are likely to increase demand for both indoor and outdoor lab space. The campus should work to address both of these effects when approving such developments.</p> <p>Workgroup members see value in locating synergistic research facilities near CARB--for example, a “clean tech park” that would include not only campus research units but also industry partners. Members also feel it would be preferable to redevelop land along University Avenue rather than use agricultural land immediately north of MLK Boulevard for this purpose.</p> <p>If land just north of MLK is developed, the campus should prioritize buildings that serve land-based research while also looking to offset the loss of “outdoor lab space” with off-site land acquisition. Buildings that serve this purpose and are synergistic with CARB and related research facilities would be ideal (e.g. air quality impacts on plant growth).</p>
<p><i>West Campus South of MLK</i></p>	
<p>Land south of MLK dedicated to land based research</p>	<p>See Vision Statement 2 above.</p>
<p><i>Any Additional KPA Categories Not Identified in Work Plan, But of Interest to Working Group</i></p>	
<p>Any additional KPA the WG would like to respond to</p>	

- I. Any items/issues/assumptions that – from your working group’s perspective- fundamentally affect land use, space, and/or development not identified in the KPA handout that should be considered in this LRDP**
- a. The workgroup discussed online masters programs relatively late in our process and did not have much time to work through it. Some but not all members feel that a significant number of new masters students could be enrolled in online programs, thus reducing the need for physical space on campus. This topic merits further discussion.
 - b. As the campus grows, the need for improved public and campus transit services increases. The Mobility Hub is helpful for linking the campus to external locations but we should not overlook the need for good, environmentally sustainable transportation in and around campus as well.

- c. New family housing should be located in thoughtfully designed neighborhoods with amenities and services that young families want and need. The farmer's market at Cal Poly Pomona is a good example.
- d. The campus, especially the instructional enterprise, is currently very tight on space. Future development should be sequenced such that new space (especially classrooms) is provided *before* growth is realized. If we continue to use late-night classes, and/or if we expand into Saturday, we also must make investments to ensure the campus is safe and welcoming at these times.
- e. The Palm Desert Center is not covered by the LRDP but it potentially can accommodate some of the anticipated growth. However the "type" of growth would have to be appropriate for the Center's location, which is about an hour from the main campus.

- I. Examples of other institutions that can serve as aspirational targets with respect to your working group’s particular area of focus. Please list associated reference documents, as applicable.**

The workgroup briefly considered this question and suggests the following schools:

1. Oregon State University
2. UC Irvine
3. UC Davis