

March 18, 2022

CP/EVC Lori Kletzer
Chancellor's Office

RE: 2022-23 Faculty FTE Recommendations

Dear Lori,

The Committee on Planning and Budget (CPB) has reviewed the divisional faculty recruitment requests for 2022-23. In preparing its recommendations, CPB reviewed the faculty recruitment call to the academic divisions (dated 10/26/21), the requests for faculty recruitment submitted by the divisions, and in addition, consulted with each of the divisional deans, all of whom received a set of questions in advance. CPB invited the Chairs of Graduate Council (GC) and the Committee on Educational Policy (CEP) to attend each of the dean consultations. CPB also consulted with the GC and CEP chairs on their perspectives, related to the implications of divisional recruitment plans for graduate and undergraduate education respectively.

Principles for Review

CPB's approach to the FTE call was to first examine and rank the positions within a division and then to examine the case each division made for central position(s). CPB's deliberations about the FTE requests were guided by the principles outlined in the FTE call letter, as well as by priorities established by CPB; namely, how the proposed FTE positions would: a) stabilize and strengthen existing undergraduate and graduate programs; and b) support established campus initiatives. At a high level, CPB reinforced the fundamental principle that the University of California's educational mission as a research university is to provide a UC quality education, defined broadly as the opportunity for students to work with world class researchers and to therefore gain "closely mentored" research experience in an intellectual and campus environment committed to diversity, equity and inclusion.¹ With the principles of a UC quality education in mind, as well as the principles of stabilizing and strengthening existing programs and initiatives, the specific factors CPB prioritized when evaluating each FTE request were (in unranked order): a) improving undergraduate success and experience by addressing impaction and high student-to-faculty ratios; b) supporting programs that are challenged to mount their undergraduate and/or graduate curriculum; c) increasing disciplinary and demographic diversity; d) strengthening graduate education; e) and, where disciplinarily relevant, recognizing positions that might support graduate education through extramural support.

Review Process

CPB received the FTE requests on January 11, 2022 and reviewed the submissions over most of the winter quarter. CPB established teams to review and facilitate discussion of each division's submissions. After each team presented and the committee discussed, CPB spent two additional sessions discussing each FTE request in the context of its home division and each division's case for central position(s). CPB utilized a matrix to examine each FTE request through the factors elaborated above. CPB received and restructured datasets to look at faculty and student growth over a sixteen year period (from 2003-04 to 2019-20) as well as student to faculty ratios from a variety of angles: looking at faculty FTE as budgeted, payroll and senate FTE; and looking at students as total student FTE, undergraduate, majors, masters and doctoral. We examined each variable and the different combinations of workload ratios by department and division, comparing departments to their division and then to the campus average. This data was provided by the

¹ We refer to the [2011 UCEP memo](#) on UC quality education which states that "The quality of education at the University of California is fundamentally derived from two key components: the background and expertise of UC faculty and students and the rich research-based environment inherent in the UC system of ten top-tier public land-grant research institutions."

Office of Budget and Planning (BAP) and was restructured to present comparative analysis both over time (see figures A1-A3 and tables A1-A3 in the appendix) and within a single year (see tables A4 & A5 in the appendix). Unfortunately, the systemwide Institutional Research and Academic Planning (IRAP) Office was unusually late in presenting 2020-21 data, so CPB's analysis only goes to the academic year 2019-20.

Challenges & Opportunities: Before moving to the specific recommendations, CPB would like to note some challenges and opportunities faced by the campus. UCSC is in a moment of opportunity with improved budget conditions due to increased state budget, rebenching redistribution to the campus via “guardrails,” and undergraduate cohort tuition increases. Campus leadership has expressed the “Faculty 100” goal. CPB agrees the campus should seize the opportunity and **calls for multi-year planning and strategic thinking about the near future shape of the university**. To that effect, CPB offers the following in the spirit of collaboration:

Challenges:

- **Long-term campus vision, FTE growth and sustainability:** While discussing faculty FTE allocation, CPB notes that the campus does not currently have a clear long-term vision for department sizes, student population, program sizes and degrees, and space. In particular, with the extraordinary student FTE and major growth witnessed by some divisions, we propose the need to shift paradigms from “*chasing* growth” with corresponding “mitigating impaction” measures, to “*shaping* growth” which is informed by a vision of the future. Thus CPB is moved to ask: Might there be a more effective, fair and sustainable approach for FTE allocation, driven by a long term plan, that can *reshape campus growth*? This raises important questions on long-term viability and stability, especially given the current level of impaction of departments, programs, and scarcity of space to carry on essential research and teaching duties. Responding to off- and on-cycle requests in a state of urgency—case by case, and year to year—is neither efficient nor conducive to deliberately shaped growth. When allocating resources, it is time to engage in a campus-wide discussion that sets clear mid-to-long-term goals for both faculty FTE and graduate growth and stabilization in terms of department sizes, undergraduate and graduate programs sizes, student enrollment, and plan admissions accordingly.
- **Space** has continued to be a critical issue as it concerns classroom, office, and (critically for the FTE review process) lab space. Classroom space and graduate student office space are obviously crucial for the basic educational functioning of any campus, let alone student success. CPB is also interested in the process of allotment of office and lab space for all new Senate faculty hires, since adequate space is required for the academic success of the incoming faculty. While CPB has been unable to get a systematic detailing of the number of faculty being hired without offices and lab space, it does note that all 15 of BSOE's requests had the office and lab space marked as TBD. CPB is deeply concerned at the prospect of hiring faculty, let alone 100 additional faculty over 10 years, with neither the proper space capacity nor a functional space management plan to manage this desired growth.

From various consults, CPB has ascertained that space management has been hampered by a space audit process mired with data and other issues. Regarding capacity, CPB understands that the campus is in the process of shifting some employees to Scotts Valley (SV) with a goal of optimizing the use of existing campus spaces. CPB urges a more systematic assessment and planning process with Senate consultation to examine questions of space management and capacity. This engagement should include planning for scenarios for optimizing existing space (including the Silicon Valley building), but also the building and use of new space. As the state allocations for construction have dried up, our established campus practices for the evaluation, prioritization and stakeholder input on new construction have atrophied, and we may need new processes moving

forward. Regarding the former, what classroom types/sizes might open up and/or offices move into Kerr Hall or other former/current administratively allocated spaces? What office spaces might be cleared from other buildings and how will we determine the best use cases for these spaces? Regarding relocation scenarios, what classes of employees and functions are being shifted to SV? What might be the implications of creating physical separations between Senate and administration, staff and faculty, academic and academic support (depending on the scenario)? CPB raises these questions not to slow down and complicate the process. Rather CPB is flagging the urgency of space matters and our commitment to participating in developing space management principles and evaluating solutions.

Similarly, while STEM hires are commonly based on the presumption of available space in Westside Research Park (WRP), a viable long-term plan for building out the WRP is hampered by budget constraints and so the expansion of capacity has taken place piecemeal. In the latter aspect, the plans for renovation and new buildings are likely to help, but on a fairly long time scale of 5 or more years. However an urgent master plan for the next couple of years is needed. In analogy to a traffic management problem, we need a master plan for increasing capacity across campus, as well as for identifying and directing traffic from each block to a corresponding block globally, and not just thinking about one move at a time.

- **Housing:** The campus is well aware of housing challenges, both in terms of limited capacity and in terms of prohibitive cost. Needless to say, attracting and adding competitive faculty presumes the existence of affordable housing. Moreover, housing is a pervasive issue that also impacts undergraduates, graduate students, staff, and the overall growth and stability of departments.

Opportunities:

- **Planning for Faculty 100:** Moving from challenges to opportunities, CPB is excited by the visionary nature of the Faculty 100 announcement. CPB would like to call for proactive, longer term strategic thinking about the shape of the university as an ecosystem. Multi-year planning can affect our vision of what the university should look like in the future and would provide a more coherent and cross-divisional strategy for expanding the faculty. CPB encourages this planning process to simultaneously consider other factors such as the size and health of individual departments, and sees this as an opportunity for faculty at the department-level to have a voice in the multi-year plan and vision.

Some themes that have emerged at CPB through various on and off cycle requests that might be useful to think about for the Faculty 100 are:

- **Critical mass and stability within departments and programs:** Beyond the metrics of student growth and faculty workload ratios is the fundamental question of whether a department or program has achieved critical mass to mount its curriculum and to allow its faculty to conduct the range of activities required for advancement: sabbatical for research; time for graduate and undergraduate mentoring; taking on service roles, Senate responsibilities, and administrative positions. Though CPB cannot define what constitutes critical mass, far too many viability reports, self-studies and external reviews point to departments and programs being at a size where faculty have less flexibility and therefore have to undertake extraordinary amounts of visible and invisible labor. CPB urges our campus to better identify conditions of stability and support bringing all departments/programs to a place of critical mass.
- **Innovative initiatives not covered by campus processes:** CPB strongly supports several Dean's requests in the 2022-23 FTE planning that moved beyond incremental hiring plans to propose hires

that are innovative, cross-divisional, and/or support campus-wide goals that do not fit neatly into departmental hiring plans. These requests include: the Visiting Assistant Professor (VAP) request for Math; the divisional teaching professor position in BSOE; the GIS/CISR position in Environmental Studies; and the Writing, Literacy, Composition, and Assessment Teaching Professor position that would be shared with Cowell College. Each of these positions moves beyond traditional thinking. The VAP would provide a mechanism for bringing in new visiting professors every few years to introduce new curricular and programmatic emphasis in a highly impacted program. The teaching professor in BSOE would develop and teach a design course sequence meant to engage and inspire all first-year Engineering students. The GIS/CISR position is arguably a campus-wide resource that would strengthen numerous departments and divisions. The Teaching Professor proposal more directly links the colleges to the divisions. CPB agreed that the rationale and implementation of this position is perhaps premature, but CPB was excited by the concept. Though CPB was not able to recommend all of these positions within the current year funding envelope, CPB welcomes and encourages such innovative thinking among departments and divisions as we set forth on the FTE 100 goal. CPB also calls for us as a campus (the Senate and Administration) to think creatively and critically on how to embrace these and other potentially forthcoming positions and visions.

Summary of Recommendations:

Having said all that, as we return to the actual FTE requests for 2022-23, the factors CPB considered for recommending the allocation of central positions were: first, to support programs that have experienced substantial student population growth relative to faculty growth so as to help stabilize and strengthen those programs; and second, to support programs that support campus initiatives.

When it comes to student growth from the years of 2003-04 to 2019-20, BSOE has accounted for 70% and 57% of total campus student FTE and major growth respectively, but only 46% of total Senate faculty growth (see figures 1 and 2). PSci follows BSOE in accounting for 32% and 33% of total campus student FTE and major growth, and a corresponding growth of Senate faculty by 34%. The Arts has seen some growth in student FTE (8%) and, after many years of decline in majors, is starting to see an uptick (see figure 3 in the appendix). SocSci has seen substantial growth in majors (20%) but a decline in student FTE. The Humanities division, following national trends, has shown declining student FTE and major growth, though is seeing an uptick in recent years in student FTE (see figure A1 in the appendix).

Figure 1

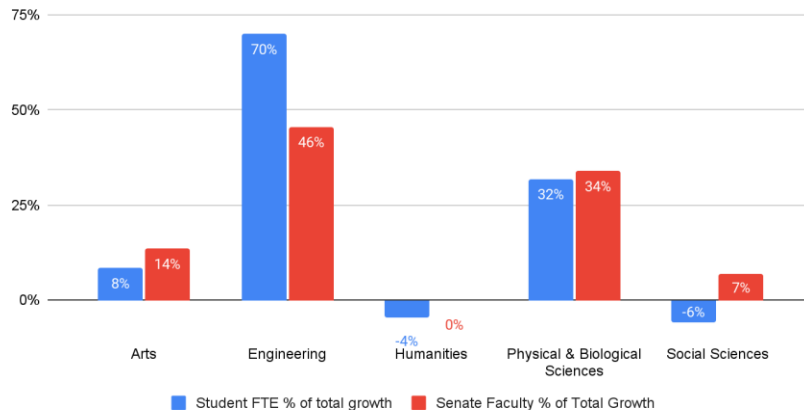
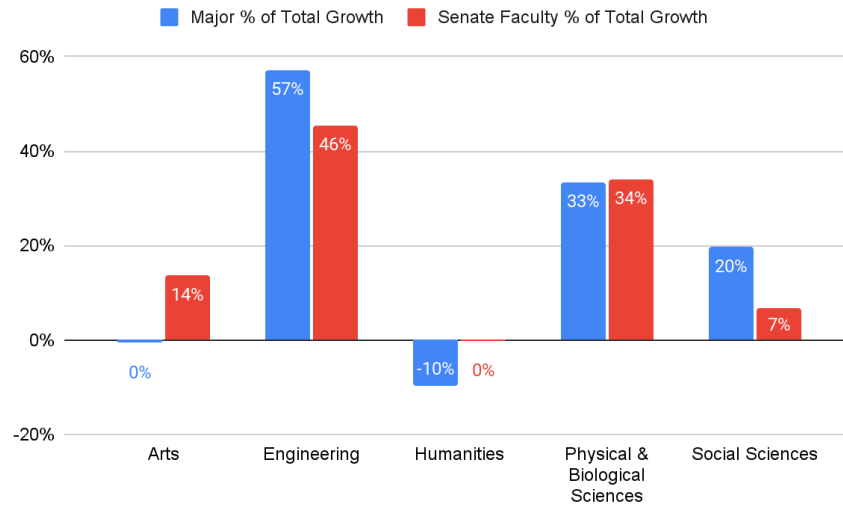


Figure 2

However, CPB also underscores that undergraduate student-to-faculty ratios are high in departments and programs across all the divisions. As Table A4 in the Appendix shows, UCSC has 20 departments with a total student to ladder faculty ratio of 28 or higher, with: 4 departments and 1 program from the Arts; 4 from BSOE, 4 from Hum; 3 from PBSci; and 4 from SocSci.²

In assessing the allocation of central positions, CPB also supports Divisions that are contributing to campus initiatives for intellectual and disciplinary growth. CPB finds that the Arts, Humanities, and Social Science Divisions all make compelling cases for such programs and therefore recommends that these divisions also receive FTEs from the center. CPB recommends central positions be allocated with the following distribution.

² CPB notes and acknowledges that there are multiple ways of representing student to faculty ratios. The total student to senate faculty ratio does not indicate ladder faculty workload as the ratio excludes non ladder instructors (lecturers, GSIs). But as a metric for the Senate faculty FTE call, it does provide a metric to help determine aspirational senate faculty growth. Major to senate faculty ratios as well as graduate to senate faculty ratios are better indicators of workload and capacity with regard to upper division and graduate instruction. Undergraduate to budgeted and payroll FTE is of course a more accurate picture of actual workload in a department. See tables A6 for various student to faculty ratios, presented as indices to campus averages for ease of comparisons.

Division	CPB's recommendation for # of Central Positions to be allocated
Arts	1
BSOE	6
Hum	1
PBSci	4
SocSci	3
Total	15

CPB does not view this as just a market-based argument. Rather, the campus ought to support each program in its mission to mount a UC quality undergraduate and graduate education; having student-to-faculty ratios at the levels found in BSOE, most especially in Computer Science and Engineering (CSE), goes against that mission. However, as indicated above, CPB would like to see broader campus conversations of an ideal steady-state not just in response to market demands, but in relationship to the larger campus ecosystem of serving the university mission, enhancing student success, overcoming space constraints, thinking about student admissions with respect to impacted programs, and the relationships of each to departmental aspirations and capacity. CPB is sympathetic and responsive to impacted departments. Still, CPB wonders if the campus has been “chasing the growth” as an incentive structure and should instead consider a strategic plan for campus-wide stabilization with targeted and shaped growth.

Discussion of Divisional FTE Requests

In this section, CPB details its response to the proposed positions. For ease of reference, the tables below use color codes to refer to: divisional positions that CPB recommends the EVC authorize (dark green); and central positions that CPB recommends the EVC allocate (light green). Unshaded positions are those that do not fit in the funding envelope. CPB also identifies if it supports a position regardless of whether or not it falls in the funding envelope. Should the CP/EVC decide to allocate more central positions the ranking and support of positions provides a recommended framework for assessment. With that said, CPB does suggest allocating one additional central FTE to the visiting professor in Math position in PBSci.

Arts Division

The Arts Division has requested authorization to hire three divisionally-funded FTEs and four centrally-allocated FTEs. CPB appreciates Dean Parreñas Shimizu’s careful reasoning for the positions she has requested and the process of consultation that she employed to arrive at them. We especially appreciate her exploration of the ways the division must develop its diversity in relation to currency in scholarship, reflecting the diversity of the campus and meeting the expectation for a 21st century university expressed in the FTE call. This attention to diversity threads throughout the divisional response and reinforces the other priorities expressed by the call. The other priorities of the call are also reflected in the divisional rankings which CPB overall agreed with: all the positions were well-justified and needed, and reflected divisional and university priorities in inclusivity, interdisciplinarity, and student success.

CPB noted several clear expressions of priority in the divisional rankings: a division between upper-half (the first four) and lower-half (the last three) rankings, and a distribution of positions across all departments except Art. The first four positions, in MUSC, PPD, HAVC, and FDM, are each marked by urgency and

thoroughly explained in terms of how the new hire would support divisional departmental priorities, address curricular gaps, help the department pivot in new directions (e.g., “decentering” Western art forms as dominant), and more. The latter three, in PPD, FDM, and HAVC, are fully explained but expressed with less urgency (these positions nearly mirror the ranking of priorities 2 through 4, and have the feel of the queue for 2023-24). This year, given the dean’s commitment to providing three divisional FTE and CPB’s strong recommendation of one central FTE, we support the first four priorities using the dean’s rankings.

Deans Rank	Dept	Discipline	CPB Rank	CPB supports position	CPB Rec	Covered by
1	MUSC	Composer - Indonesian/Asian/Pacific-Islander traditions	1	Yes	Authorize	Division
2	PPD	PPD: Playwriting and Interactive Media	2	Yes	Authorize	Division
3	HAVC	Visual Studies in the Asia-Pacific Region	3	Yes	Authorize	Division
4	FDM	Social Documentation and Critical Practice	4	Yes	Allocate	Center
6	FDM	Latinx, Chicanx and/or Latin American Film and Media	5	Yes		
5	PPD	PPD: Dance	6	Yes		
7	HAVC	Latin American Visual Cultures and Theories	7	Yes		

1) Music (MUSC): Composer - Indonesian/Asian/Pacific-Islander traditions, Assistant Professor Step 3 (Divisionally Funded)

This position fills critical needs in the department’s undergraduate curriculum and growing doctoral programs. It is needed in order to maintain the excellence of the department's Doctor of Musical Arts (DMA) following four faculty retirements, and also contributes to diversifying faculty and curricular offerings. CPB supports this request.

2) Performance Play and Design (PPD): Playwriting and Interactive Media, Assistant Professor Step 3 (Divisionally Funded)

We concur with the request for a position in playwriting and interactive media. This position fills a very specific need for playwriting courses in the department, without which parts of the department’s curriculum and programming have been put on hold since a retirement in 2019.

3) History of Art and Visual Culture (HAVC): Visual Studies in the Asia-Pacific Region, Assistant Professor Step 3 (Divisionally Funded)

CPB supports this request given the department’s high student:faculty ratio (currently 29.5) and need for additional faculty expertise in this area. Although 39% of HAVC’s Visual Studies graduate students study topics related to Asia and the Pacific, only two faculty have covered the region since the retirement of HAVC’s East Asianist. This position would bolster this area of departmental strength, support graduate student recruitment, and has high potential to contribute to faculty diversity and cross-divisional initiatives, and to generate external funding.

4) Film and Digital Media (FDM): Social Documentation and Critical Practice, Assistant Professor Step 3 (Centrally Funded)

FDM is a rapidly growing program in which declared and proposed majors have increased 19% in the past three years and 40% since AY 2010-11. The department has lost two senior faculty in recent years. The proposed position is needed to support the current program and allow growth to meet increasing student demand. In addition, this request “foregrounds the production of BIPOC-centered film and media,” supporting curricular growth in areas that support student needs and interests by fostering diversity, equity, and inclusion.

5) Film and Digital Media (FDM): Latinx, Chicax and/or Latin American Film and Media, Assistant Professor Step 3

This position is described as a much-needed hire that is “designed to address longtime deficiencies in our dept” and the need to speak to the sociocultural context of students, “which is essential if our department is to live up to UCSC’s designation as a HSI.” CPB supports this position, which is part of a larger departmental effort to bolster Latinx-identified faculty expertise, support Latinx-identified students, and expand curricular offerings in this area.

6) Performance Play and Design (FDM): Dance, Assistant Teaching Professor/LPSOE

This is the only position where CPB departed from the Dean’s ranking. The hire of this teaching professor is intended to coincide with the launch of a new low-residency dance MFA program, which the division hoped to submit to the Senate in fall 2022. However, the MFA proposal has not yet reached the Senate for review. Further, CPB notes that while this position is crucial to *teaching* in the proposed program, its relatively low envisioned starting rank (LPSOE, or Assistant Teaching Professor) suggests that this FTE would not be central to the *development* of the program and curriculum itself. Thus CPB feels that this hire could be deferred for one year. If the Arts division is approved for as many as five positions in the coming year, we recommend the FDM position on Latinx, Chicax and/or Latin American Film and Media.

7) History of Art and Visual Culture (HAVC): Latin American Visual Cultures and Theories, Assistant Professor

Like the proposed position 6, above, Latin American/Latinidades visual studies is an important area of growth for HAVC. This requested FTE builds on the work of two senior faculty in this area. It would raise the department’s national and international profile and address questions of climate, biodiversity, and socio-ecological futures.

Baskin School of Engineering

The Baskin School of Engineering has requested authorization to hire two divisionally-funded FTEs and fifteen centrally-allocated FTEs. CPB appreciates Dean Wolf’s careful reasoning for the positions and the process of consultation he employed to arrive at them. CPB also notes the dire situation BSOE is currently facing in terms of space (offices, research Labs, etc.), and plans to work with Dean Wolf and campus to address this important issue. CPB endorsed BSOE divisional priorities and FTEs rankings with a few exceptions detailed hereafter.

Deans Rank	Dept	Discipline	CPB Rank	CPB supports position	CPB Rec	Covered by...
8	CSE	Storage Systems	1	Yes	Authorize	Division
2	AM	Scientific Machine Learning and Data-Driven Methods	2	Yes	Authorize	Division
3	CSE	Database Systems	3	Yes	Allocate	Center
4	CSE	Database Systems	4	Yes	Allocate	Center
5	BME	Computational Genomics	5	Yes	Allocate	Center
6	CM	Teaching Professor (Experiential Learning/Capstone)	6	Yes	Allocate	Center
10	ECE	Power Conversion	7	Yes	Allocate	Center
1	ENG	Teaching Professor (First-Year Design)	8	Yes	Allocate	Center
11	CSE	Programming Languages and Distributed Systems	9	Yes		
7	ECE	Teaching Professor (Experiential Learning/Capstone)	10	Yes		
12	CM	Human Computer Interaction	11	Yes		
13	CSE	Security and Privacy	12	Yes		
14	CSE	Security and Privacy	13	Yes		
15	ECE	Signals and Systems	14	Yes		
9	AM	Teaching Professor (Lower Division)	15	No		

1) CSE - Storage Systems, Assistant Professor step 3 (Divisionally Funded)

This position was given priority #8 by Dean Wolf. After extensive discussion, CPB decided to prioritize this position at the top. The rationale for this decision was the need to stabilize and replenish a research area in which CSE has an international reputation, which seems to be in imminent danger of declining. This position falls under CPB principles of stabilization, in particular stabilization of a declining research area. CPB also notices that CSE is an extremely impacted department with a total student workload FTE per payroll faculty ratio of 49.4 (2020-2021 data). Although the hire won't mitigate impact in CSE significantly, it will reduce pressure on systems-oriented CSE faculty, who are bearing the brunt of most core courses in CS and CE BS programs. CPB recommends divisional funding for this position.

2) AM - Scientific Machine Learning and Data-Driven Methods, Assistant Professor step 3 (Divisionally Funded)

CPB agrees with Dean Wolf's ranking (#2) and recommends divisional funding. Scientific machine learning is an emerging discipline that brings together scientific computing, data science and machine learning to craft a new generation of tools for data-driven modeling of complex systems. There is an increasing demand for research and topics courses on data-driven methods in Engineering which are not under the purview of Statistics or Computer Science. This new position will contribute to stabilizing the Applied Mathematics department which currently has only 9 senate faculty and it is experiencing a total

student workload FTE per payroll faculty ratio of 32 (2020-2021 data), and a rapidly growing new major. The position was also ranked #2 by Dean Wolf.

3 & 4) CSE - Database Systems, Two Assistant Professors step 3 (Centrally Funded)

These two positions were given priority #3-#4 by Dean Wolf. CPB agrees with the Dean's ranking and recommends center funding for both positions. The two positions will be replacing expertise in a foundational area of computing lost due to retirements. The proposed hires will provide much needed teaching expertise to cover courses in basic database systems techniques, and develop a new research capability in CSE at a time where database systems is becoming essential to many application areas. The two positions will also complement recent hires in machine learning and artificial intelligence, and help mitigate impact in CSE.

5) BME - Computational Genomics, Assistant Professor step 3 (Centrally Funded)

This position was given priority #5 by Dean Wolf. CPB agrees with the ranking and recommends center funding. The new faculty will develop new effective algorithms for the analysis of genomes or other high-throughput biology datasets. The new position does not require a wet lab or significant space allocation. CPB raised the question of whether this position would be still ranked #5 ahead of positions requiring wet labs or larger laboratory space, if these become available within a reasonable time frame. In his response to the FTE call, Dean Wolf agreed and emphasized that the campus needs to urgently address the lab space situation. However the BME position is a high priority regardless.

6) CM - Experiential Learning/Capstone, Assistant or Associate Teaching Professor (Centrally Funded)

This position was given priority #6 by Dean Wolf. CPB confirms the ranking and recommends center funding. CM is an impacted department with a student per faculty ratio above 30 (same student-per-faculty ratio as AM). The request for a Experiential Learning/Capstone Teaching professor is intended to address a vulnerability in the CM undergraduate program, specifically its dependency on lecturers to mount a large experiential capstone sequence. Such highly subscribed sequence in computer game design has cross-divisional value as it draws students from both the CM program and the sibling program in the Arts division.

7) ECE - Power Conversion, Assistant Professor step 3 (Centrally Funded)

This position was given priority #10 by Dean Wolf. CPB upgraded the position to #7, and replaced the ECE teaching professor in Experiential Learning ranked #7 by Dean Wolf. The rationale for the CPB recommendation is that ECE currently has an LSOE, and is not an impacted department. In particular, the ECE student per faculty ratio is the lowest in Baskin Engineering. On the other hand, the proposed new hire in power conversion will bring to ECE much needed expertise in wide band-gap semiconductor devices. Such a dynamic new area of research is expected to revolutionize many systems using semiconductors, leading to an increase in student interest.

8) BSOE Divisional Position - First year design, Teaching Professor, up to Full (Centrally Funded)

This position was given priority #1 by Dean Wolf. After extensive discussion CPB decided to downgrade this position to #8, but recommends center funding. The teaching professor will be tasked to build, oversee and finalize the development and delivery of a new first-year design course sequence, which has significant pedagogical and cross-departmental value. BSOE is currently partnering with CIED to incorporate the new course sequence into a certificate program in Innovation and Entrepreneurship at Crown College.

CPB noted that not enough course planning has been done to launch a program in the short run. While the committee appreciated that leading course development is a mandate of this position, there were also concerns about the need to shift requirements and sequence in different BSOE majors. CPB also noted that there is an ongoing search in BSOE for a very similar divisional LSOE position, likely to be filled in Fall 2022. In view of these, the current request for this senior LSOE divisional position seemed premature at first glance. CPB however appreciated the underlying vision of making cohesive hires of LSOE's in BSOE. This direction of supporting Experiential Learning/Capstone, by hiring LSOE's and teaching professors in other BSOE departments, e.g., in ECE, has the merit of high cross-departmental value. On balance, CPB supports this position due to its transformative potential.

9) CSE - Programming Languages and Distributed Systems, Assistant Professor step 3

This position was given priority #11 by Dean Wolf. While ultimately not recommending center funding, CPB also upgraded this position to #9. The position is intended to address the explosive growth of student enrollments in computer programming courses, which has been mainly driven by job opportunities in Silicon Valley and elsewhere. CPB's upgrade to #9 reflected a recognition of the need to mitigate impact in CSE and address the very strong market-driven demand for computer programmers to develop the next generation of the Internet of Things. CPB recommends putting this position forward again in the next year.

10) ECE - Experiential Learning/Capstone, Teaching Professor, up to Associate

This position was given priority #7 by Dean Wolf. CPB downgraded this #10 and replaced #7, in effect replacing this with the ECE tenure-track assistant professor in power systems. ECE already has an LSOE, and CPB did not see sufficient justification for an additional teaching professor in ECE, especially given that the total student workload FTE per payroll ECE faculty ratio is 14 (2020-2021 data). Such a student workload is the lowest in BSOE, and significantly below the BSOE divisional average (33 in 2020-2021). The teaching professor in ECE is expected to contribute to undergraduate education in BSOE beyond the capstone, e.g., by developing strong synergies with the proposed new first-year design course sequence (position ranked #8, recommended for center funding). CPB recommends the position but does not recommend divisional or center funding. CPB would like to see how the new first year design course sequence unfolds before allocating additional resources. Prioritizing a research ladder-rank faculty FTE in ECE (position #7) that can attract and support graduate students and postdocs seemed a better option at this time.

11) CM - Human-Computer Interaction, Assistant/Associate professor

This position was ranked by Dean Wolf #12. CPB upgraded this position to #11, but does not recommend allocation of divisional or center funding. The requested position will complement existing department strengths by adding expertise in the areas of tangible, physical, and wearable computing devices. CPB does not currently see a pressing need for this position.

12 & 13) CSE - Security and Privacy, Two Assistant Professors step 3

These positions were ranked by Dean Wolf #13 and #14. CPB upgraded the rankings to #12 & #13, but does not recommend allocation of divisional or center funding. The two assistant professors are intended to grow CSE expertise in the areas of security and privacy, which includes the protection of information and systems in various computer science domains, e.g., networking security, data security, operating/distributed systems, and cryptography.

14) ECE - Signals and Systems, Assistant Professor step 3

This position was ranked by Dean Wolf #15. CPB upgraded the ranking to #14, but does not recommend allocation of divisional or center funding. This position will strengthen ECE expertise in signal processing and communications, e.g., wireless communications, signal processing for bioinformatics, machine learning applications in communication systems, etc. The multi-disciplinary value of this position will benefit multiple BSOE departments, e.g., BME, CSE, AM and CM.

15) AM - Assistant Teaching Professor

CPB supported this position in concept, but felt it was premature. This position was ranked by Dean Wolf #9, while CBP downgraded this position to #15 and does not support funding this year. CPB noted, however, that AM is currently the only department in BSOE without a teaching professor and it is an impacted department with a new rapidly growing major. AM is also currently strengthening collaborations with the department of Mathematics for lower division course offerings. Mathematics education in BSOE and broadly on campus is a topic of major relevance which has been affecting multiple divisions and requires allocation of resources. The requested LSOE for the AM department also has a high cross-divisional value. Overall, CPB agreed reconsidering a new position for AM (either LSOE or ladder-rank faculty) would be more appropriate after the impacts of new teaching collaborations and impacts of growing AM majors is better known.

Humanities Division

The Division of Humanities has requested authorization to hire seven divisionally-funded FTEs and two centrally-allocated FTEs. CPB was impressed with Dean Alinder's highly inclusive process of developing her division's priorities, engaging not only department chairs, but also a broad range of other Humanities faculty in discussions in advance of submitting her request. We were also impressed with the synergies she envisions with other divisions and her thoughtful approach to sequential planning (e.g. requesting a position in Chinese for LAAL this year, in advance of a request for a position in modern China for History in a future cycle). We recommend that one central position be allocated to the division: History's Pre-Colonial West Africa position, which has the potential to support the Black Studies minor in CRES and thus dovetails with an important campus initiative. Although the same might be said of the Literacy, Composition and Assessment position in Writing, the administrative details of this (potentially exciting) joint position with a college are not sufficiently clear for us to support a central position at this time. CPB endorses Dean Alinder's overall rankings, our rationales for which are as follows:

Deans Rank	Dept	Discipline	CPB Rank	CPB supports position	CPB Rec	Covered by
1	CRES	Critical Race Science & Technology Studies	1	Yes	Authorize	Division
2	Phil	Open, Chair	2	Yes	Authorize	Division
3	Phil	Ethics & Technology	3	Yes	Authorize	Division
4	Wrt	Writing Studies	4	Yes	Authorize	Division
5	LAAL	Chinese and Applied Linguistics	5	Yes	Authorize	Division
6	Lit	Anglophone World Literatures	6	Yes	Authorize	Division
7	Lit	Experimental/Computational/Fieldwork	7	Yes	Authorize	Division
8	His	Pre-Colonial West Africa	8	Yes	Allocate	Center
9	Wrt	Literacy, Composition, and Assessment	9	No		

#1) Critical Race and Ethnic Studies (CRES): Critical Race Science and Technology Studies, Open

Given CRES's recent departmentalization and the fact that it is attracting (and serves) a rapidly growing number of underrepresented students, CPB strongly endorses this open-rank position. The Science and Technology Studies area (linked to CRES's social justice concerns) is an emerging one for the department and reflects the Humanities Dean's commitment to building cross-divisional synergies.

#2) and #3) Philosophy (#2 Open, Chair, Professor; #3 Ethics & Technology, up to Assistant Professor Professor step 5)

Given Philosophy's urgent predicament because of separations, the request for two positions (one for a department chair at the senior level and one for an assistant professor in ethics and technology), seems absolutely crucial and CPB concurs with the Dean's high ranking of these two positions.

#4) Writing: Writing Studies, Associate LSOE

CPB concurs with the request for an LSOE Teaching Professor who specializes in writing studies. This was a recommendation of the program's 2021 External Review Committee (ERC). We support this request as a key response to the ERC recommendations.

#5) Languages & Applied Linguistics: Chinese and Applied Linguistics, Open

CPB agrees with the request and ranking. Assuming that the current recruitment in Japanese and applied linguistics leads to a successful hire, Chinese will be the largest language section (in terms of enrollments) without a Senate faculty member; at the same time, LAAL has continued to add courses in Chinese over the past several years in response to student demand. CPB also appreciated how the Dean is thinking about sequential hires: this hire would pave the way for a subsequent modern Chinese history position, an area of past departmental strength.

#6) Literature: Anglophone World Literatures, Up to Assistant Professor step 5

CPB concurs with the request and ranking. The Dean's request responds to both longstanding strengths of and recent challenges for the department. A position in Anglophone World Literatures is of critical importance for departmental sustainability, given the high undergraduate demand for courses in Anglophone literature, the strength of graduate studies in English, the desire to equalize the ratio of smaller to larger classes taught by instructors in English, and probable imminent retirement of two senior English faculty. CPB also recognizes that Literature has the largest graduate program in the Division, and is one of the two largest undergraduate majors in Humanities.

#7) Linguistics: Experimental, Computational, and/or Field Linguistics (Up to Associate Professor step 3)

CPB supports the request for a tenure-track position in experimental, computational, or fieldwork approaches to linguistics and endorses its current ranking. Again, CPB is struck by the Dean's interest in strengthening inter-divisional connections (in this case with Social Sciences and Engineering) by strengthening the department's curricular and research profile in the language sciences.

#8) History: Precolonial West Africa, Up to Assistant Professor step 5

CPB supports this request and recommends that it be supported by a central provision. CPB's reasoning is that this position would not only be an important addition to the department's undergraduate and graduate curricula (and thus justified in programmatic terms) but that it would also contribute to providing historical grounding for the new Black Studies minor in CRES. It is this larger impact of the position (i.e. serving needs beyond that of the particular department) that shaped our decision to recommend central funding. We also believe that UCSC's History Department may be the only one in the UC system without a West African specialist and note that a similar position was proposed a number of years ago as part of the Faculty Initiated Group Hire (FIGH) initiative. It was recommended by the Academic Senate but no FTE was forthcoming at the divisional level at the time.

#9) Writing: Literacy, Composition and Assessment, Assistant LSOE

CPB was excited by the creative approach underlying this request for an Assistant Teaching Professor, a joint appointment with Cowell College. We agree that this could potentially speak to the complex needs of first-year students and strengthen the Academic Literacy Curriculum (ALC). However, given that this is the first time in many years that a College has had a designated full or partial FTE, we would like to see the details fleshed out before recommending the allocation of a central position.

Physical and Biological Sciences Division

The Division of Physical and Biological Sciences (PBSci) has requested authorizations to hire seven replacement positions, all of which would use authorizations of divisionally-funded FTEs. PBSci further requests six growth positions funded by central FTE. After consultation with the Dean, CPB reordered the prioritization to reflect the Dean's commitment to replacements first. The remaining central positions are in the Dean's requested order, except for the Visiting Assistant Professor in Math, which CPB recommends moving up in priority. The rankings and the rationales are as follows:

Deans Rank	Dept	Discipline	CPB Rank	CPB supports position	CPB Rec	Covered by
3	EEB	Evolution, Ecology, Physiology - Behavioral ecology	1	Yes	Authorize	Division
5	Chem	GCH - Biomedical chemistry	2	Yes	Authorize	Division
6	MCDB	GCH - Immunology	3	Yes	Authorize	Division
7	MCDB	GCH - Stem cell biology	4	Yes	Authorize	Division
8	EEB	Teaching Professor - Inquiry-based field science pedagogy	5	Yes	Authorize	Division
11	Ocean	Climate resilience - Marine ecology & food webs	6	Yes	Authorize	Division
12	Ocean	Climate resilience - Oceanic microbiome	7	Yes	Authorize	Division
1	Math	Mathematics - Analysis or partial differential equations	8	Yes	Allocate	Center
2	Physics	Materials Science	9	Yes	Allocate	Center
4	METX	GCH - Environmental health sciences	10	Yes	Allocate	Center
9	Chem	Teaching Professor - Organic chemistry pedagogy	11	Yes	Allocate	Center
13	Math	Visiting Assist Prof program - Math research and pedagogy	12	Yes		
10	EPS or Ocean	Climate resilience - Coastal impacts and adaptation	13	Yes		

#1) Ecology and Evolutionary Biology - Behavioral Ecology, Assistant Professor step 3 (Divisionally Funded)

CPB agrees with Dean Koch that a replacement position in Behavioral Ecology is urgently needed to support research and teaching expertise in this core subdiscipline in Ecology and Evolutionary Biology. This position would support the hire of a scholar focusing on animal behavior from an evolutionary and/or ecological perspective, including the mechanisms underlying behavior and their broad evolutionary and ecological consequences. The position will support the division's initiative in Evolution, Ecology, Physiology. As a replacement position and a key area of strength, CPB supports the use of a divisional FTE for this position.

#2) Chemistry - Biomedical Chemistry, Assistant Professor step 3 (Divisionally Funded)

Dean Koch requested four (unranked) FTE to support the Global and Community Health (GGH) initiative. CPB moved the three replacement positions up, while the fourth is now position 10 in CPB ranking. This position in Biomedical Chemistry would support an already well funded program that attracts many graduate students. CPB agrees with the Dean's assessment that replacement of this position is critical for maintaining acceptable student to faculty ratios and to ensure adequate research opportunities for biomedical students in the undergraduate GCH program. CPB also supports the Dean's proposed plan to conduct a broad search for the GCH positions to attract a diverse and potentially transformative (in terms of research emphasis) candidate pool.

#3) MCDB - Immunology, Assistant Professor step 3 (Divisionally Funded)

This is the second replacement hire within GCH. As with position #2, CPB agrees that because this position is being spurred by turnover, the position is critical to maintaining student to faculty ratios and providing research opportunities for undergraduates. The faculty member will contribute to both GCH and MCDB, further establishing GCH while maintaining excellence within MCDB. We also support the Dean's decision not to limit the search to any specific subfield, so as to to develop a large and diverse applicant pool. As a replacement position, we support the use of a divisional line to fund this position.

#4) MCDB - Stem Cell Biology, Assistant Professor step 3 (Divisionally Funded)

This is the third replacement hire within GCH. As with position #2, CPB agrees that the position is critical to maintaining student to faculty ratios and providing research opportunities for undergraduates. The Dean notes that there are considerable funding opportunities for this area. The hire will strengthen both GCH and MCDB, particularly in providing research opportunities for undergraduates. We support the Dean's intention to propose a broad search in stem cell biology in order to develop the largest and most diverse pool of candidates. As a position spurred by turnover, we also support the use of a divisional line to fund this position.

#5) Ecology and Evolutionary Biology - Teaching Professor in Inquiry-Based Field Science Pedagogy (Divisional Funded)

This position fills a critical role in the EEB undergraduate programs for introductory field curriculum in the majors focusing on student-led inquiry and experiential learning. CPB agrees with the Dean's assessment that this position would enhance connections with the UC Reserve System and other partners, and that this hire would strongly support preparation of lower division undergraduates for the field-oriented upper division courses emphasized by the EEB program. CPB supports the use of a divisional line for this position.

#6) Ocean Sciences - Marine Ecology and Food Webs, Associate Professor step 3 (Divisionally Funded)

The Dean requested 3 unranked positions to support a cluster hire in an exciting new divisional initiative in Climate Resilience, and this is the first of 2 positions that CPB supports. Two recent separations in Biological Oceanography have stripped critical expertise in this subdiscipline, which represents a growth area in an interdisciplinary area of national need. The position will thus satisfy student demand for a critical gap in the undergraduate and graduate curricula and provide for strategic growth going forward. As a replacement position, CPB supports the use of a divisional hire for this position.

#7) Ocean - Oceanic Microbiome, Associate Professor step 3 (Divisionally Funded)

This is the second of 2 positions in the cluster hire in Climate Resilience that CPB supports. Two recent separations in Biological Oceanography have stripped critical expertise in this subdiscipline. Like the previous position (#6), a position in Oceanic Microbiomes in Ocean Sciences would provide growth in an interdisciplinary area of national need, and satisfy student demand for a critical gap in the undergraduate curricula, specifically for Marine Biology and Environmental Science majors. We agree that this position is likely to attract top flight graduate students as well. As a replacement position, the CPB supports the use of a divisional hire for this position.

#8) Mathematics - Analysis or Partial Differential Equations, Assistant Professor step 3 (Centrally Funded)

CPB agrees that this position in Analysis and Partial Differential Equations will allow Mathematics to add depth to its curriculum in the core toolboxes of science and engineering. CPB agrees with the Dean that this is a high priority position and one warranting a central line. This position will help alleviate extremely high student-to-faculty ratios in Mathematics, as well as supporting growing critical mass in research in the department. Our recommendation to move the priority of this position from #1 to #8 was based, solely, on the Dean's indication that replacements would stand as his highest priority in the Division. We agree that the position will provide major service to the campus as a whole, and we support the use of a central line for this position.

#9) Physics - Synthesis and Characterization of Quantum Materials, Associate Professor step 3 (Centrally Funded)

The Materials Science program has been a priority for the campus for a number of years but has not substantially moved forward. CPB agrees with the Dean that an experimentalist in crystals and quantum materials would be a foundational position that would attract students and contribute to student success while positioning the campus for more large, collaborative grants. CPB also agrees that hiring at the Associate Professor would alleviate concerns about establishing a successful research program within the existing constraints of space and construction for a laboratory-intensive position. Our recommendation to move the priority of this position from #2 to #9 was based, solely, on the Dean's indication that replacements would stand as his highest priority in the Division. We support the prioritization of a centrally funded FTE for this position.

#10) METX - Environmental Health Sciences, Assistant Professor step 3 (Centrally Funded)

This is the fourth GCH hire and is a request for a centrally funded position focusing on environmental toxicology. While not a replacement, CPB agrees with the Dean's assessment that this position fills a gap caused by the transition of a key faculty member into an administrative position. The hire would strengthen both the GCH program and METX, and would contribute to student success while likely attracting considerable funding and a large graduate student group.

#11) Chemistry - Teaching Professor in Organic Chemistry Pedagogy (Centrally Funded)

CPB supports the use of a central line to build instructional capacity in Chemistry. The department has an extremely high student to faculty ratio, and this hire will substantially improve student success in Chemistry and beyond. The CPB was encouraged to see that this LSOE would coordinate with other LSOEs in allied departments, creating a coherent approach to teaching the introductory curriculum in PBSci. Considering the importance of Chemistry instruction across a range of disciplines within PBSci and across campus, we believe this is an appropriate use of a central position.

#12) Mathematics - Visiting Assistant Professor

CPB finds that the VAP (visiting assistant professor) program Math position, currently at Priority#13 in the PBSci list has many attractive features. As argued by Dean Koch, and also supported by the recent external review, this position is quite standard in other Math Departments in the UC system and has the potential to bring in young scholars to the Department with expertise in various branches of Math. Math is the most highly impacted department in PBSci, with an undergraduate student per faculty of slightly above 40, relative to the average of ~25, and this added position can make a big difference. The VAP position has

the potential to open many doors in the future and CPB is enthusiastic about the potential for this type of position.

#13) Earth and Planetary Sciences or Ocean - Climate Resilience, Coastal Impacts and Adaptation, Associate Professor step 3

CPB supports this third position in the cluster hire in Climate Resilience. This position would provide a foundation for inter-departmental, inter-divisional (e.g. the Coastal Science and Policy program, the Institute for Marine Sciences) and regional collaborations with the USGS and other agencies. CPB agrees with the Dean's assessment that there would be considerable potential for support of undergraduate research projects, and that this hire could serve as a catalyst for the establishment of a robust Climate Resilience program that would attract both funding and a diverse graduate student population. CPB ranks the position slightly lower than the Dean, because of the compelling arguments made for the value of VAP position for mathematics education on campus as a whole (#12).

Social Sciences Division

The division of Social Sciences has requested authorizations to hire one divisional and seven centrally allocated FTEs, a request we understand as shaped by the constraining effects of the structural deficit in the division of Social Sciences. CPB is impressed with the pressing importance of all of these hires and supports them all, though not all fall within the current-year funding envelope. CPB's rankings and rationales are as follows:

Deans Rank	Dept	Discipline	CPB Rank	CPB supports position	CPB Rec	Covered by
1	Econ	Macroeconomics/Monetary Economics	1	Yes	Authorize	Division
2	Anth	LPSOE, Biological Anthropology of Health and Resilience	2	Yes	Allocate	Center
4	Psych	Developmental Psychology	3	Yes	Allocate	Center
8	ES	Geographic Information Systems/CISR	4	Yes	Allocate	Center
5	Econ	Applied Microeconomics	5	Yes		
7	Psych	Quantitative Psychology/Statistical Analysis	6	Yes		
6	Edu	Ethnic Studies/Civic Education	7	Yes		
3	Soc	Media and Cultural Politics	8	Yes		

#1) Economics - Macroeconomics, Assistant Professor step 3 (Divisional Funded)

CPB concurs with Dean Mitchell that this is a high priority position which will support undergraduate student success in key lower division classes in a heavily impacted department, while also supporting the Business Management Economics major through upper division classes. The position would focus on the effects of macroeconomic policies on health and income distributions, contributing to broader campus research themes on inequality and poverty.

#2) Anthropology - Biological Anthropology of Health and Resilience, Teaching Professor (Centrally Funded)

CPB recommends that this position be centrally funded. While the Anthropology department as a whole is not impacted compared to other departments in the division, faculty in the Biological Anthropology subfield, which maintains an independent curriculum serving high enrollments of STEM interested students, is severely overburdened. The retirement of Alison Galloway, and the departure of a long term lecturer, has exacerbated an already untenable situation, creating inequities in workload and threatening future retention. Temporary lecturers are currently supported through divisional funding, but this is not a sustainable situation in the long term, as curricular planning is difficult, and finding necessary faculty is not guaranteed. This position supports undergraduate student hands-on laboratory experience, a critical factor in supporting student success, especially for minority and first generation students, and is well aligned with the GCH initiative.

#3) Psychology: Developmental Psychology: Development of Health and Well-Being/Global and Community Health, Assistant Professor step 3 (Centrally Funded)

This position supports the nascent Global and Community Health program and is well articulated with recent hires in health and wellbeing, both within the Psychology department and in other departments. The topics covered by this position are of critical intellectual interest. The position also improves undergraduate student experience by addressing impaction in a heavily enrolled department.

#4) Environmental Studies - Teaching Professor (Centrally Funded)

CPB strongly supports this position because of its critical importance in stabilizing access to GIS training for undergraduate and graduate students across Social Sciences and the campus as a whole. This position would stabilize an essential program which, because no FTE are permanently attached to it, could soon find itself in a precarious position. Any loss in teaching capacity in GIS could have down the line effects on graduate and undergraduate training across the campus. Additionally, this position supports grant and research opportunities significantly, and will play a central role in the future GISTAR masters' program. Because this position was added to the FTE call at the last minute it was ranked by the division at #8, but taking into account strong arguments made by the Division of Social Sciences, CPB decided to raise its priority to #4. CPB however also recommended that this position be allocated central FTE beyond this year's number, as an initial part of the Faculty 100 goal. We therefore rank it at #4 in this year's ranking, with the understanding that if additional central support is forthcoming, it would move onto the list of centrally funded positions.

#5) Economics - Applied Microeconomics, Assistant Professor step 3

CPB agreed with the division of Social Sciences that this is an important position that improves undergraduate experience in a heavily enrolled department, and that it addresses topics of pressing societal concern around health, inequality and poverty, as well as campus strategic research goals around data science and policy. Given these linkages, CPB adjusted the ranking to put this position slightly higher than still worthy but lower ranked positions below.

#6) Psychology - Quantitative Psychology/Statistical Analysis in the Social Sciences, Associate Professor step 3

This position addresses a critical need for quantitative methods and statistical analysis within the department of psychology, and across the division, through affiliations with the Global and Community Health program, and the Center for Statistical Analysis in the Social Sciences. This need is made more

urgent because of a faculty retirement. This position also supports undergraduate learning experience in an overenrolled department. CPB recommends this position for central support, but ranked #4 above somewhat higher.

#7) Education - Ethnic Studies/Civic Education, Assistant Professor step 3

This position addresses the rising importance of ethnic studies in state education curricula, and will prepare teachers who can deliver ethnic studies and critical social justice related classes, while expanding campus research on a topic of pressing societal and intellectual interest. This position articulates well with themes in CRES and LALS and in the campus more broadly. While CPB supported this position, we ranked this slightly lower because the enrollments in the department are less critical than some of the higher ranked positions.

#8) Sociology: Media and Cultural Politics, Assistant Professor step 3

New forms of media are involved in dramatic political and social changes, and this position therefore addresses a topic of pressing contemporary societal concern and of great intellectual interest. CPB considers this a worthy position, but we reluctantly disagreed with the ranking of the Division of Social Sciences, and moved it from #3 to its current position at #8. Our reasoning was that this position did not as strongly address improving undergraduate experience as other positions in more impacted departments did, and that the connections of this position to campus research themes, and to other departments, were less clearly articulated.

CPB appreciates the opportunity to provide its recommendations on the 2022-23 faculty FTE requests. We look forward to further discussion as needed on the recommendations and CPB's review process.

Sincerely,



Dard Neuman, Chair
Committee on Planning and Budget

cc: Academic Deans
Chancellor Larive
AVC Register
VPAA Lee
VPDGS Biehl
VPDUE Hughey
iVCSAS Baszile
Graduate Council Chair Caldwell
CEP Chair Larrabee
Senate Chair Brundage
Senate Director Mednick
AVC McClintock
Analyst Brondarbit

Appendix A

Figure A1 (student FTE trends from 2003/4 - 2019/20)

Color legend moves left to right from 2003/4 (blue) to 2019/20 (light orange).

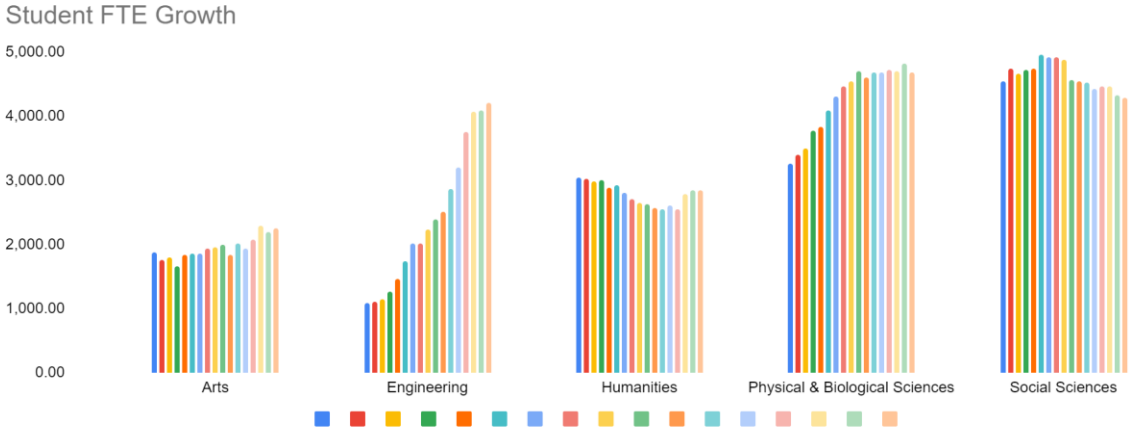


Table A1 (absolute and percentage growth from 2003/4-2019/20)

Total Student FTE	2003-04	2019-20	Absolute Growth	Percentage Growth	% of Total Growth
Arts	1,877.40	2,251.90	374.5	20%	8%
Engineering	1,085.30	4,201.50	3,116.2	287%	70%
Humanities	3,046.80	2,848.80	-198.0	-6%	-4%
Physical & Biological Sciences	3,268.60	4,685.40	1,416.8	43%	32%
Social Sciences	4,552.50	4,292.20	-260.3	-6%	-6%
DIVISIONS TOTAL	13,830.60	18,279.80	4,449.2	32%	100%

Figure A2 (Major count trends from 2003/4 - 2019/20)

Color legend moves left to right from 2003/4 (blue) to 2019/20 (light orange).

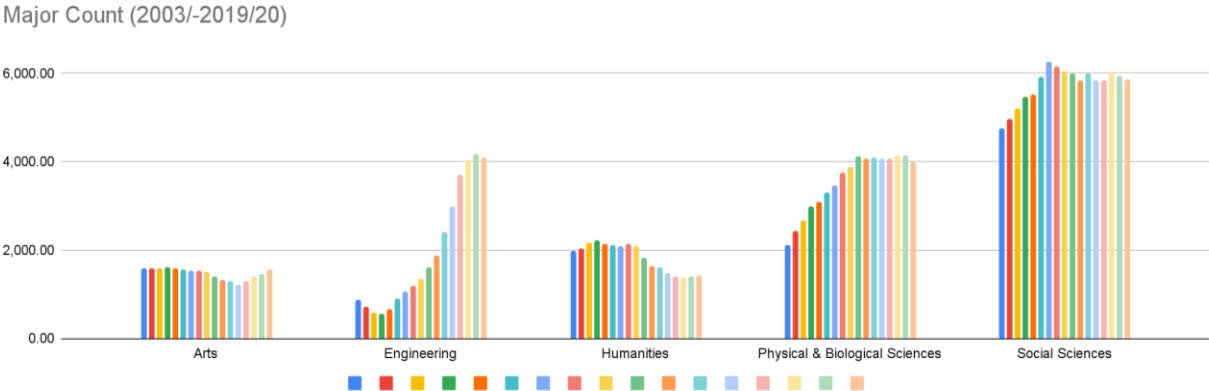


Table A2 (Major count absolute and percentage growth from 2003/4 - 2019/20)

Major Count	2003-04	2019-20	Absolute Growth	Percentage Growth	% of Total Growth
Arts	1,589.70	1,563.70	-26.0	-2%	0%
Engineering	885.7	4,097.00	3,211.3	363%	57%
Humanities	1,971.00	1,419.30	-551.7	-28%	-10%
Physical & Biological Sciences	2,103.30	3,981.70	1,878.4	89%	33%
Social Sciences	4,749.30	5,854.30	1,105.0	23%	20%
DIVISIONS TOTAL	11,299.00	16,916.00	5,617.0	50%	100%

Figure A3 (Senate faculty growth from 2003/4 - 2019/20)

Color legend moves left to right from 2003/4 (blue) to 2019/20 (light orange).

Senate Faculty Growth (2003/4 - 2019/20)

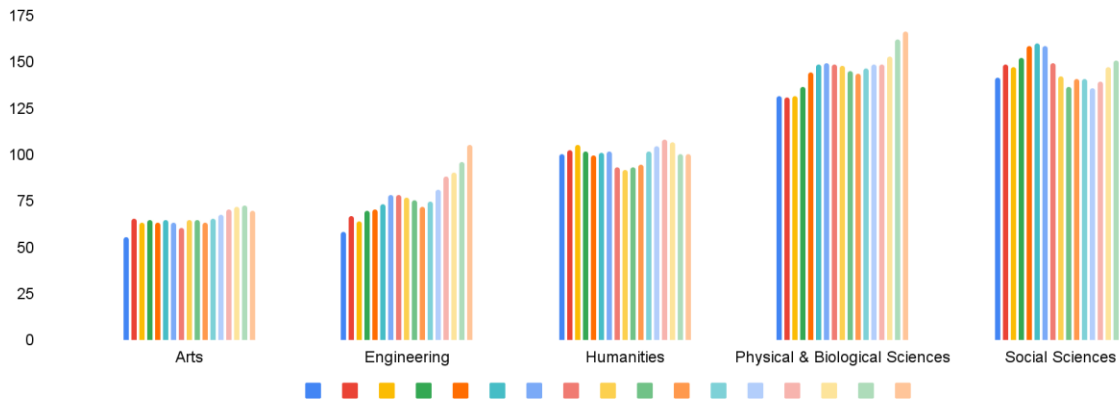


Table A3 (absolute and percentage growth of Senate faculty from 2003/4-2019/20)

Senate Faculty	2003-04	2019-20	Absolute Growth	Percentage Growth	% of Total Growth
Arts	55.51	69.56	14.1	25%	14%
Engineering	58	105	47.0	81%	46%
Humanities	100.1	100	-0.1	0%	0%
Physical & Biological Sciences	131.6	166.7	35.1	27%	34%
Social Sciences	141.4	148.5	7.1	5%	7%
DIVISIONS TOTAL	486.58	589.76	103.2	21%	100%

Table A4 (cross campus total student to ladder faculty ratios)

Div (2019-20)	Department	Total Student/Ladder FTE
Hum	Writing	103.7
Hum	Languages	64.0
BSOE	Statistics	63.6
BSOE	Computer Science and Engineering	59.9
PBSci	Mathematics	55.5
Arts	Music	41.3
SocSci	Economics	36.6
SocSci	Psychology	36.6
Arts	Theater Arts	35.9
PBSci	Chemistry & Biochemistry	35.2
BSOE	Computational Media	33.6
Arts	Art	33.3
BSOE	Applied Math	32.3
Hum	Philosophy	32.2
Arts	History Art & Visual Culture	32.2
SocSci	Education	30.7
Hum	Linguistics	29.1
SocSci	Politics	28.3
Arts	Unassigned	28.0
PBSci	Physics	28.0
SocSci	Sociology	27.0
PBSci	MCD Biology	27.0
PBSci	Ecology & Evolutionary Biology	26.3
Arts	Film and Video	25.8
SocSci	Unassigned	23.6
SocSci	Latin American & Latino Studies	22.5
SocSci	Anthropology	21.6

BSOE	Biomolecular Engineering	20.8
SocSci	Environmental Studies	20.4
Hum	History	20.4
PBSci	Astronomy & Astrophysics	20.4
Hum	Literature	19.4
BSOE	Electrical and Computer Engineering	17.7
PBSci	Ocean Sciences	17.4
Hum	Feminist Studies	17.0
Hum	HistCon	16.9
PBSci	Earth Sciences	16.8
BSOE	Unassigned	13.7
PBSci	Environmental Toxicology	12.8
	Campus Average	31.5

Table A5 (cross campus total student to Budget faculty FTE ratios)

2019-20	Division	Total Student/Budget FTE
Computer Science and Engineering	BSOE	45.4
Mathematics	PBSci	41.1
Writing	Hum	38.1
Statistics	BSOE	37.4
Psychology	SocSci	32.4
Theater Arts	Arts	31.6
Chemistry & Biochemistry	PBSci	31.4
Philosophy	Hum	31.1
Languages	Hum	31.0
Linguistics	Hum	28.3
History Art & Visual Culture	Arts	28.3
Economics	SocSci	27.8
Art	Arts	26.3

Physics	PBSci	25.9
Applied Math	BSOE	25.6
Computational Media	BSOE	25.6
MCD Biology	PBSci	24.0
Unassigned	Arts	23.6
Politics	SocSci	23.6
Film and Video	Arts	23.5
Music	Arts	22.8
Sociology	SocSci	22.4
Ecology & Evolutionary Biology	PBSci	20.8
History	Hum	19.6
HistCon	Hum	19.5
Literature	Hum	18.7
Latin American & Latino Studies	SocSci	18.4
Education	SocSci	18.4
Astronomy & Astrophysics	PBSci	18.2
Anthropology	SocSci	17.9
Biomolecular Engineering	BSOE	17.3
Ocean Sciences	PBSci	17.3
Environmental Studies	SocSci	16.9
Earth Sciences	PBSci	16.4
Feminist Studies	Hum	16.4
Electrical and Computer Engineering	BSOE	16.0
Unassigned	SocSci	14.8
Environmental Toxicology	PBSci	11.9
Unassigned	BSOE	11.9
Science Communications	PBSci	10.6
Unassigned	Hum	10.4
Unassigned	PBSci	3.0

Tables A6 (various student to faculty ratios indexed as percentages to campus averages)

Indexes are arrived at by multiplying the department ratio relative to the campus average by 100. An index of 100 is on campus average, an index of 150 is 1.5 the campus average, and an index of 50 is 0.5 the campus average.

- Green shaded cells = index 115 or more than the campus average (among departments)
- Blue shaded cells = index 85 or less than the campus average (among departments)

Arts 2019-20 Student to Faculty Ratio (Indexed to Campus Departmental Average)	Total Student/Budget FTE	Total Student/Payroll FTE	Total Student/Senate FTE	Major Over Ladder Faculty	Doc/Senate Faculty FTE	Masters/Senate Faculty FTE
Art	115	105	110	195	0	0
Film and Video	103	119	85	172	75	101
History Art & Visual Culture	124	128	106	35	140	0
Music	100	80	137	25	98	57
Theater Arts	138	130	119	43	0	34
Unassigned	103	98	93	204	0	162
BSOE 2019-20 Student to Faculty Ratio (Indexed to Campus Departmental Average)	Total Student/Budget FTE	Total Student/Payroll FTE	Total Student/Senate FTE	Major Over Ladder Faculty	Doc/Senate Faculty FTE	Masters/Senate Faculty FTE
Applied Math	112	121	107	0	154	213
Biomolecular Engineering	75	84	69	125	199	67
Computational Media	112	122	111	169	112	526
Computer Science and Engineering	198	240	198	350	221	331
Electrical and Computer Engineering	70	74	59	102	117	174
Statistics	163	184	210	0	167	184
Unassigned	52	53	45	0	0	0
Hum 2019-20 Student to Faculty Ratio (Indexed to Campus Departmental Average)	Total Student/Budget FTE	Total Student/Payroll FTE	Total Student/Senate FTE	Major Over Ladder Faculty	Doc/Senate Faculty FTE	Masters/Senate Faculty FTE
Feminist Studies	71	82	56	51	95	0
HistCon	85	75	56	0	322	0

History	86	96	67	66	59	24
Languages	135	48	212	0	0	0
Linguistics	124	139	96	76	117	0
Literature	82	85	64	73	0	0
Philosophy	136	131	106	88	96	29
Unassigned	45	10	0	0	0	0
Writing	167	52	343	0	0	0
PBSci 2019-20 Student to Faculty Ratio (Indexed to Campus Departmental Average)	Total Student/Budget FTE	Total Student/Payroll FTE	Total Student/Senate FTE	Major Over Ladder Faculty	Doc/Senate Faculty FTE	Masters/Senate Faculty FTE
Astronomy & Astrophysics	80	83	67	0	255	0
Chemistry & Biochemistry	137	145	116	70	174	14
Coastal Science Program	0	0	0	0	0	0
Earth Sciences	72	72	56	67	102	34
Ecology & Evolutionary Biology	91	94	87	192	159	10
Environmental Toxicology	52	51	42	0	115	118
Mathematics	180	189	184	90	124	57
MCD Biology	105	109	89	331	149	23
Ocean Sciences	75	87	58	0	127	91
Physics	113	133	93	77	157	3
Science Communications	46	45	39	0	0	1058
SocSci 2019-20 Student to Faculty Ratio (Indexed to Campus Departmental Average)	Total Student/Budget FTE	Total Student/Payroll FTE	Total Student/Senate FTE	Major Over Ladder Faculty	Doc/Senate Faculty FTE	Masters/Senate Faculty FTE
Anthropology	78	92	71	92	93	0
Economics	121	134	121	253	88	91
Education	81	84	102	0	127	698
Environmental Studies	74	82	67	142	92	0
Latin American & Latino Studies	81	90	74	74	87	0
Politics	103	121	94	226	79	0

Psychology	142	147	121	342	115	0
Sociology	98	106	89	194	87	0
Unassigned	64	67	78	178	0	0