

**The Deteriorating Environment for Conducting Research
at the University of California:**

A Qualitative Analysis of Frustrations and Rewards

Prepared for
The University Committee on Research Policy

by

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EXECUTIVE SUMMARY

In response to increasing concerns about the declining quality of the research environment within the University of California, the University Committee on Research Policy conducted a survey of faculty at all nine campuses to determine the extent and content of the problems experienced by the faculty. In addition to a detailed questionnaire (reported separately in the May 1996 UCORP Report: *The Deteriorating Environment for Conducting Research at the University of California: An Interim Report Based on a Survey of UC Academic Senate Faculty*), the survey provided opportunity for faculty members to write in an open-ended way about the most frustrating and most gratifying aspects of the research environment at the University of California. This report presents concerns of the faculty, both positive and negative, resulting from that open-ended exploration.

A detailed qualitative analysis of responses provided by 1,228 faculty form the basis for this report. Analysis of these data revealed five major domains of the research environment, from the perspective of the faculty. These domains included, in decreasing order of size [as measured by frequency of response]: 1) concerns about the research enterprise; 2) concerns about the basic academic enterprise; 3) aspects of high morale; 4) aspects of low morale; and 5) time constraints on faculty research.

Within these five domains, 15 categories of faculty concerns and 7 categories of faculty enthusiasms about the research environment were identified. The most frequent categories of concern were the poor quality of supports, the lack of basic supports, space, the lack of internal funds for research, and the lack of research supports. Among the enthusiasms, the most commonly cited categories were the high quality of research supports, the high quality and easy collaborations among colleagues and the high quality of students.

For both domains and categories, differences by campus, by academic group, by gender and by valence or intensity of response (from positive to negative) are discussed. The report concludes with a statement of basic issues that appear to be at the core of faculty concerns. These include the very strong value the faculty place on the quality of the intellectual climate of the University, the equally strong concerns about the negative impact of the bureaucracy of the University, and their need for a sense from the University and the community that the strengths of the University are respected and valued.

INTRODUCTION

In response to dramatic shortfalls in State funding for the University of California in the early 1990's, the faculty began expressing significant concerns about the quality of the research environment. In response to these concerns, the University Committee on Research Policy conducted a survey of faculty at all nine campuses to determine the extent and content of the problems experienced by faculty members. The survey was fielded between January and March 1996. The initial report resulting from this survey was released in May 1996 and

reported details of design, methods, and the statistical analysis of the data. This report is a supplement to that first report, presenting the results of a qualitative analysis of the content of the open-ended responses to the final question of the survey, which asked:

Please provide any other information about the research environment on your campus that you believe the Academic Senate should know about. In particular, UCORP would like to know what aspects of your own research environment have been most frustrating for you and what aspects of your research environment are most gratifying to you as a faculty researcher?

The central task of this analysis was to develop a conceptual domain for faculty concerns, both positive and negative, about the research environment of the University of California. This basic conceptual domain is described for the UC system as a whole and for each individual campus.

RESEARCH METHODS

Sample Characteristics

Of the 8,202 UC Academic Senate faculty, surveys were sent to 3,285 and completed surveys were returned by 2,381, for a return rate of 72%. Of those completing the survey, 1,228 provided written answers to this final question (52% of respondents). Some of these answers were relatively brief specific issues while some provided two or more pages of information. The task of this analysis is first to report on patterns in the content of these responses and second, to place these responses in the context of the larger survey.

As Table 1 on page 33 shows, campuses were about equally represented among the qualitative responses, in that about half of the survey respondents from each campus provided written information, with Santa Cruz being somewhat below 50% and Berkeley and Irvine somewhat above 50%.

For each campus, the distribution by academic group (department type) of those who did respond to this open-ended item was remarkably similar to the larger sample. This is shown in Table 2, on page 34. Thus, we can feel relatively comfortable that this group of responders is not skewed by academic group.

Limits to the Research Questions That Can Be Asked

Both the nature of the responses and the characteristics of those who responded provide some limitations on the nature of the questions that can be asked of these data. Since the respondents seem to be relatively fairly distributed across campuses and academic groups, it is appropriate to make cross-campus and across-academic group comparisons. However, cell sizes for making the next level of analysis (academic group X campus) are small enough that such comparisons are not usually appropriate. We will only mention those that are so

striking and uniform that they are clearly indicating some larger issue. This occurs very rarely.

The format for asking questions of these data is as follows:

1. What is the conceptual domain of faculty concerns across the entire set of responses?
2. Are there cross-campus differences in which domain elements are most prevalent?
3. Are there academic group, gender or academic rank differences in which domain elements are most prevalent?

Data Coding and Analysis Procedures

As the responses to this open ended question arrived for analysis, they consisted of hand-written, or sometimes typed, statements from individual faculty members. A few such statements were only a phrase or two, others filled two or more pages of closely written text. Our task was to extract meaningful information from these highly variable bits of text. To that end, the data coding team was assigned the task of identifying from one to three specific issues from each faculty member's response. We coded one record per "specific issue" (i.e., nature of the complaint or praise), with up to three specific issues per person. (If more than three distinct statements were made, we took the most verbose three, or if similar in detail, the first three.) Each specific issue was summarized with a one to two sentence brief description that was intended to capture the key elements. For example, "Computer support has improved dramatically in the past few years." or "There are inadequate funds for matching grants and equipment acquisition." Another example: "Set backs and research delays have occurred due to the logistics nightmare related to the earthquake damage in Royce Hall." The original handwritten response, in each case, was considerably longer than these sentences. Table 3, on page 34, summarizes the numbers of individuals whose statements were coded as one, two and three specific issues. There were no major differences among campuses or by academic group within campuses in tendency to provide one or more specific issues.

Each of these specific issues was part of a record created by the data coder that had the following "codes" attached to it: Individual ID#; Campus ID#; Academic Group ID# (for more information on coding procedures for this item, see May 1996Report); Depth of Detail (ranging from 1 [brief] to 3 [lengthy]); Valence of Opinion (ranging from -3 [very unhappy/angry] to +3 [enthusiastic]); and finally, General Topic Area (whether space, equipment, indirect costs, etc.).

Any single specific issue could be coded as fitting more than one topic area. For instance, if someone stated that "colleagues and students are terrific," it was coded as both a "Colleague" and a "Student" issue.

Analysis of Categories

This stage of data coding was completed by research assistants at UCI and at UCSF. All of the data were then transferred to a single electronic file at UCSF. At that point, Dr.

Mittiness took all of the specific issues listed under a single topic area and looked for patterns of similarity of specific issues. This was repeated iteratively for each topic area until the entire dataset had been recoded at a more detailed level. This re-coding resulted in each code being transformed into one or more categories, each with one or more subcategories. The dataset was sorted by category, then categories and subcategories were examined for internal consistency and items were re-scored if appropriate. This was repeated until the final coding scheme consisted of a number of categories and sub-categories that were clearly distinguishable from one another and were internally consistent, that is, similar issues were in the same sub-category. Finally, once the complete coding scheme, from domain to category to subcategory was clearly specified, each of the 2,079 specific issues was re-read in the context of this coding scheme and the codes were adjusted to ensure accuracy. Through this iterative process, if a specific issue was “incorrectly” coded in round 1 or 2, it had a number of chances to be recoded before the final categories were set.

A subcategory, then, is a set of one or more specific issues that are basically similar to one another. For instance, all comments that complained about the quality of the service provided by campus contracts and grants offices were classified in a subcategory of “contracts and grants services.”

A category is a grouping of subcategories that are all similar to one another – each subcategory is “a kind of X” where X is the concept covered by the category. For instance, all the sub-categories that referred to problems with the quality of services provided by University units, including contracts and grants, were classified in a category of “poor quality of support.”

A domain is a grouping of categories that are all similar to one another – each category is “one aspect or one kind of A” where A is the concept covered by the domain. For instance, there were five categories that are clustered into the research enterprise domain: including the category of poor quality of support.

The domain structure is presented in Table 4, on page 35. The sub-categories for each category are presented in Table 5 on page 36. The sample sizes reported for each domain and category in the text for this portion of the analysis refer specifically to the raw sample sizes, before weighting the dataset to ensure that the data represent the population. Any comparisons across groups should be done with the weighted data, represented by the ranking and divergence analyses summarized in Tables 6 and 7 on pages 39-41.

Valence

Each category or domain has a valence – that is, the degree of positive or negative feeling attached to it. Each specific issue was coded on a scale from -3 to +3 to indicate valence or degree of negative or positive feeling attached to the issue. A mean valence was constructed for each category and each domain by summing the valence scores for all specific issues in that category or domain and dividing by the sample size of that category or domain. Thus, a mean valence of -3 would indicate that every person who made a statement belonging

to that category indicated that they were very angry about the issue. A mean valence of +3 would indicate universal enthusiasm among the people making statements in that category. The mean valences for negative categories ranged from -0.98 to -2.12. The mean valences for positive categories ranged from +0.59 to +2.07. The mean valences for the domains and categories are summarized in Table 4, on page 35.

Comparisons Among Subgroups

The final step of analysis was to focus on differences between campuses, among academic groups, by gender and by academic rank. As in the first UCORP Report on the Deteriorating Environment for Conducting Research at the University of California (May 1996), these analyses used “weighted cases” to compensate for the unequal fraction of each academic group sampled on each campus and to account for differences in response rates across academic groups and campuses. As a result, readers can view the results of these analyses as coming from an equal probability sample of UC faculty members. All subgroup comparisons are done with the weighted dataset.

Two steps were taken to evaluate group differences. First, weighted ranks of categories were produced for each subgroup. These weighted ranks are presented in Table 6 on pages 38-39. Then, weighted means were produced for each subgroup. This study examined discrepancies among subgroup means by using a standard of 0.15 standard deviations as an arbitrary but reasonable estimate of a “meaningful” difference. Thus, for campus and academic group, a subgroup was considered to be meaningfully different from the whole if its mean (basically, the percentage of faculty members in that subgroup who made a statement coded within that category) was 0.15 standard deviations greater than or less than the grand mean for the sample. For gender and academic rank, the largest and smallest means were compared to each other, using the same criterion of 0.15 SD as the cutoff for meaningfulness. The results of this analysis are summarized in Table 7 on page 40.

RESULTS

Analysis resulted in five domains, each having from one to five categories. The categories, in turn, each had one to nine subcategories. Table 4, on page 35, summarizes this conceptual structure at the level of domains and categories. Table 5, on pages 36-37, summarizes this conceptual structure at the level of categories and subcategories. The following discussion will discuss the categories first, with brief illustrations. This discussion will be in order of frequency of appearance among the specific issues raised. This will be followed by a discussion of domain structure. Patterns of domains and categories within campuses will be discussed last.

Suggestions to Guide Interpretation of the Results

In the process of interpreting the categories and domains, it is crucial that the reader remember that this is primarily a qualitative analysis. The implications of this are significant:

the numbers of cases within each subcategory or category are much less important than the patterns of categories and the relative size of categories. Thus, we may safely say that a category that represents 50% of the cases is very important and that a category that represents only 5% of cases is less important. That smaller category is NOT necessarily unimportant by virtue of its uncommonness in the sample. Importance is not only or even most accurately measured by frequency. Sometimes a less common category that is more passionately stated or that strikes more closely to the central heart of an issue is more significant than a less dramatic category that is much more common. Therefore, the reader will remember to focus on patterns rather than numbers. Frequencies and percentages are provided merely as guides, rather than as the most significant indicators.

In the discussion of categories, frequencies for both the entire sample and each campus are presented. However, frequencies for individual campuses are not discussed further, except in cases of significant deviation from the pattern of the entire sample. Sample sizes at the level of subcategories are often sufficiently small to demand limited interpretation of cell frequencies. In the discussion of domains, differences among campuses are more appropriately discussed, because of larger cell sizes.

Domain Structure

After relatively homogenous groups of items were made, these small groups (subcategories) were assembled into larger groups or categories based on the relative similarity of their content. This resulted in 22 categories into which faculty issues were placed. In order to get a clearer sense of the larger patterns among these categories, the groupings were examined to see if there were any larger themes that could be discerned. There were five large themes that emerged from this process. These are called domains and it is to these that we first turn to get the “big picture” about the faculty’s response when asked to identify the greatest frustrations and most gratifying aspects of the research environment. The two largest domains, by a factor of two, expressed significant concerns about the research enterprise (38% of specific issues) and about the basic academic enterprise (36% of specific issues).

The *Research Enterprise* domain (n=801, representing 38% of specific issues) draws together categories that refer specifically and directly to research: the poor quality of research support, the lack of adequate internal research funds, the lack of needed research supports, concerns about indirect costs, and difficulties in obtaining extramural funding. These concerns were expressed on all campuses, and across all academic groups. The mean valence of the research domain was -1.53.

The *Basic Academic Enterprise* domain (n=750) represented 36% of all specific issues. These are more elemental issues, relating to the basic functioning of the University as a teaching institution, as well as being relevant to research. The concerns included the lack of basic supports (secretarial services, office supplies, janitorial services, etc.), concerns about space, concerns about computers, computer networks and other necessary equipment, concerns about library cutbacks, issues of student funding and out of pocket expenses. Again,

these concerns were expressed on all campuses and by all academic groups. The mean valence of the basic academic enterprise domain was -1.54.

The third domain reflected *Low Morale*, (n=149, 7% of specific issues) and included concerns about institutional unfairness, a bad working environment, and negative reports of colleagues. The mean valence of the low morale domain was -1.79.

The fourth domain contained a single category, that of *Time Constraints*. Only 7% of specific issues referred to time constraints (n=132). Since this consisted of a single category, the content of this domain is discussed in more detail in the next section. The mean valence for time constraints was -1.52.

The final domain, that of *High Morale*, (n=348) included 17% of the responses. Examination of the categories included suggests that there are two basic sources of high morale: institutional and intellectual. Institutional sources of high morale included high quality research support, good equipment support, COR and other intramural funding, high quality libraries, and appreciation for new space. Intellectual sources of high morale focused on the quality, collaborativeness, and helpfulness of faculty colleagues and the high quality of students. The mean valence of the overall high morale domain was +1.79. The mean valence of institutionally based high morale was +1.74, and for intellectual aspects of high morale the mean valence was +1.98.

Categories of Concerns

Poor Quality of Research Support

n = 288; Mean Valence = -1.65

The most common category was that of concerns about the poor quality of research support. Accounting / grants administration was the subcategory of research support that was most often seen to be poor quality. Faculty members reported that “there is no good bookkeeping/grant support within the department. Support should be mandated and funded by the University.” Some faculty members reported that “accounts are kept so poorly and inaccurately that I am forced to spend research assistant money on doing this work, which is a misuse of grant funds. But I have no choice since I get so little competent help for the overhead charged.”

Concerns about Contracts and Grants or Office of Research performance were also reported, with particularly large numbers of UCSD and UCSF comments. Faculty frustration with Contracts and Grants is expressed in comments such as these: “the campus Office of Contracts and Grants provides little encouragement and support in submitting grants. Rather one feels a battle against them to get a grant prepared.” Or “Long delays in the Office of Contracts and Grants have cost me several grants and lost opportunities. Research administration spends so much time covering itself that it has no time for actual research support.”

The third most common concern was with an excessively rigid and inflexible bureaucracy. One vivid, but representative concern was as follows:

“What is most frustrating is the immense amounts of paperwork and lack of accountability of administrative personnel who make mistakes or simply try to do as little as possible. The often absurd number of people involved in a basic need such as hiring a technician is very frustrating. Frequently, Departmental Administrators ‘must’ be the intermediaries in matters which do not seem to warrant the need for specialized hyper-complicated ‘assistance.’ At every level administrators create a need for additional paperwork to justify the existence of their positions and those of people working for them. Our Environmental Health and Safety Office has over 40 people - the size of a small department, yet it is virtually useless for any matter. Our department has more than 90 administrators for only 60 faculty. It does not make any sense as far as I can see.”

A second view of the matter:

“Too much creative energy is diverted into wasteful and unnecessary forms and paper-pushing. It is difficult to accomplish many things in a timely manner. The bureaucracy has evolved into a life of its own, with the original purpose of facilitating research becoming an unattainable past ideal. I see little chance for me to thrive here. In the last three years I have wasted more time trying to do research than actually doing research (this is in comparison to three other universities, corporate research and non-governmental research). However, I remain optimistic about the future! Things can change.”

The fourth most common concern was with what were seen to be overly rigid regulatory committees. In particular, Animal Care, Biosafety, Human Research, and Environmental Health and Safety Committees were mentioned.

“Our animal care restrictions have been a consistent thorn in my side. Their requirements for obsessive levels of documentation (even with non-mammalian vertebrates), frequent inspections, and office incompetence have inclined me not to seek additional funding to support this area of my research effort.”

Animal care facilities are listed separately because of a meaningful number of comments about the quality of the facilities themselves, not specifically referring to the Animal Care Committees. For instance,

“For a researcher planning to use mouse genetics in my studies of the immune system, the lack of space for mice at UCSF, and the high cage costs are my biggest concern. As mouse cage costs (in barrier facilities) are lower at other universities, including other UC campuses, I am baffled why the costs not only remain high at UCSF, but have significantly increased in the past few months.”

Or “Animal space is terribly short and often substandard.”

Problems with recruitment and retention of high quality support staff were reported by a number of faculty members. The implication in many cases was that the University is not able to retain quality support staff or that certain policies have had the result of encouraging senior, experienced staff to leave and their subsequent replacement by inexperienced staff. There were a few comments that indicated less than congenial relations between faculty and staff, but these were in the minority.

A number of faculty members complained about significant increases in the costs of services. For instance, “charges for services (shops, computer services, etc.) have escalated by more than 100% in the past five years.” Some faculty members found the passing along of new and increased charges to be some of their most frustrating experiences:

“Passing along of numerous ‘service department’ charges to grants is most frustrating. This practice has exploded on the UCD campus since the state budget cuts. Service units (illustration services, chemical and radioactive waste pick-up, etc.) have been ‘charged’ by the administration to recover costs with no apparent cap or correlation of costs with the quality of service. Also units did not ‘trim the fat’, they just came up with creative ways to charge for services – my favorite – charging a yearly parking fee for state vehicles [‘E’ plates] not housed on campus that are on campus maybe one to two days a year. There is no reason to implement this charge other than raising money for a service unit. The mid-level administration has not been trimmed at all and charges against grants are out of control, and getting worse.”

The remaining sub-categories were purchasing, personnel (human resources), patent policy and industry relations, and academic computing. There were a few concerns about lack of knowledge of the research process by some administrators. Finally, an “other” category was a catchall for a number of quality concerns that varied a good deal. Overall, all campuses reported problems with some domain of research administration, with especially high numbers among those campuses with larger volumes of extramural research funding.

Lack of Basic Supports

n = 228, Mean Valence = -1.53

Basic supports are those items that are foundational to just getting along – the concerns in this area included absence of secretarial services, declining departmental budgets, lack of basic office supplies, salaries that are too low, unspecified lack of faculty support, and inadequate janitorial service. By far the largest subcategory was that of secretarial services, accounting for 71% of the complaints about basic supports. Faculty members on all campuses reported the almost complete lack of secretarial support, whether for teaching or research. As we will see later, when faculty members spoke of time constraints, a significant number complained that their research was seriously hampered because they spent so much time doing simple clerical duties because their departments no longer provide any secretarial help. The

ironies included reports such as “the ORU charges each grant for secretarial support but gives none and resents being asked.” Of large concern are statements such as the following:

“I am ...routinely ... using a grant supported secretary to do things that are explicitly within the teaching mission of the University. I may be fired for this at some point, but if I were to spend my time xeroxing handouts, typing envelopes for letters of recommendation, etc., I wouldn't have time for teaching and research. This campus is the worst I have seen with regard to administrative and secretarial support for faculty.”

Declining departmental budgets have important consequences for faculty research. Faculty members comments included concerns about erosion past survival level: “Repeated yearly budget cuts to the department general funds have made the research environment worse and worse. From general office supplies to facility maintenance [resources] have been reduced to minimum [and now] to totally inadequate.”

“This stimulating, productive environment began to erode in the late 70's or early 80's under two influences: budgetary retrenchment and the ascendancy of 'big' science over those of us who believe in 'hands on', 'small' science. The former effect gradually removed essentially all our technical staff and instrument support funds. The latter effect redistributed our ever shrinking departmental resources to those who could pay for them on a recharge basis from outside funds. This resulted in the demoralization of several of my collaborators (in my opinion, the best scientists we had), who left for better pastures.”

In other sub-categories, faculty members spoke of not having the most basic office supplies – paper, computer supplies, pencils, etc. While relatively uncommon, some faculty members reported that they also do their own janitorial work. The lack of basic services was reported on all campuses.

Space Concerns

n = 205, Mean Valence = -1.58

Space concerns appeared on every campus, although they were least often mentioned at UC-Santa Cruz, the newest campus. By far the biggest concern was with the lack of research space. This was an overwhelming concern at UCSF, but was very strong among all faculty members with space concerns. While the lack of storage space appeared very strongly in the survey data, the qualitative data referred mostly to office and research laboratory space.

“Space allocation is the source of much anxiety and friction among people who should be collaborators, not adversaries. Tremendous opportunities have been lost because administrators have moved too slowly in procuring space for new projects – in some cases, it has killed sizable programs.”

Others report finding their own solutions:

“It is absurd that we have so little office, lab and storage space. I had to spend \$100,000 more to buy a house than I otherwise would have to get a house big enough for office space for myself and my husband (also a UC professor).”

Lack of space was, in some cases pervasive: “Lack of space of any kind – office space, storage space, meeting space, research/work space, lounge space. Building is like a prison with tiny cells.”.

The second major space concern was that of a deteriorating infrastructure. Faculty spoke of the “absolute decay of buildings to the point where they are health hazards,” “an appalling lack of space and decaying facilities,” “the infrastructure is crumbling,” etc. There were instances of roofs leaking, plumbing not working, temperature controls for labs that were ineffective, as well as a general lack of maintenance. The deferred maintenance of the past years is noticeable and is affecting quality of life.

The third concern was the quality of the research space. While the absence of space was most striking, poor quality research space was of major concern – with some research space being so poor that it made certain lines of inquiry impossible. Faculty members reported laboratories becoming obsolete and noncompetitive with neighboring schools. These problems are not new, but often long-standing sources of frustration.

“My lab has been inadequate to support research for 15 years, in spite of a successful grants record - frequent power failures, wide temperature and ventilation volume variation in air conditioning. No permanent benches, too limited number/size of sinks, air/water/gas/vacuum services, cleaning services – one good side is the inadequacies have forced graduate students to become unusually resourceful.”

Another faculty member echoes:

“My main dissatisfaction has been that the quality of research space and the research facility have been the same for 22 years, despite increasing grants funding over the years. The roof in the research building leaks when it rains. We have been housed in a “temporary facility” for 22 years.”

A fourth, less common concern was that of distance. This was most commonly reported at UC-San Diego, where the geographical separation of the Hillcrest Campus was reported to be a problem by several people. Poorly managed logistics of moves were reported by a few people to have hampered their research for a significant amount of time. Inadequate or inconvenient parking was mentioned by a few people.

Lack of Internal Funds for Research

n= 183, Mean Valence = -1.40

The lack of intramural funds to support faculty research was of concern to a significant number of people. Especially in a climate of severely tightening extramural funding, the faculty were clearly wishing that the University could respond by providing small amounts of

money to a greater number of faculty members, whether for small research projects, start-up projects, or to provide bridge or gap funding. Comments reflected a concern that the University is unwilling or unable to foster the research process with small amounts of monetary support. “There seems to be no effort by administration to foster pilot programs that may eventually develop into extramurally funded programs other than seed grants here and there.” Or

“There is no bridge-funding available if one loses a grant...There should be some way to provide bridge money for some reasonable time while the PI attempts to get refunded. This could be based upon the number of years of prior funding. For example, if one has a grant for 10 years, then loses it temporarily for six months to one year, there should be funds available to the PI to help continue the work and salaries using a formula based on previous indirect costs accrued to the campus.”

Finally, “It is perhaps more important than ever to nourish research areas that are not easily funded extramurally: not for the research itself, but rather for the invigorating effect it has on the teaching/learning environment on a campus.”

Problems with reimbursement of travel expenses were a second significant concern regarding internal research money. Some faculty members reported that insufficient travel funds had major consequences:

“I myself have found this situation so financially crippling that I generally no longer apply to give papers at major national and international conferences – i.e., the most important venues. One alternative would be to give faculty a little more flexibility in choices. For example, allow faculty to ‘combine’ the paltry ‘research,’ ‘lecture travel,’ and ‘field travel’ funds into a lump sum, which they then would be responsible for spending with accountability. Or, and I know it would be difficult, allow faculty ‘on’ and ‘off’ years which balance out – sometimes I need a lot of money one year because of my stage of research and little or none the next.”

Junior faculty members reported particular problems:

“Airfare for one conference a year (which is all we get) is not enough, especially if you are a junior faculty person trying to make a name for yourself. And restriction on conferences that can be reimbursed are also overly harsh. The conference has to be sponsored by a professional organization, not a university or research institute. I have had to turn down invitations from prestigious institutions because of lack of funds. Two or three conferences per year should be funded. Only the Chair’s plane ticket to the MLA is paid for; this makes it difficult for all members of search committees to participate in interviews. In my department, junior faculty frequently serve on these committees and our much smaller salaries make paying for these trips especially difficult.”

As a particular note, there were a number of complaints at UCLA that the rules for travel reimbursement had recently been changed without adequate consultation with the faculty.

There were a number of complaints about the intramural research award grant process. Some were vague, suggesting that the review process needed streamlining. Others were angry: “The COR on my campus is inept, its procedures random, and its evaluation criteria useless.” Others expressed a wish for every faculty member to receive a fixed amount of research funds each year. There was a concern that there be more feedback from the competitive process, so that PIs know how to change their proposals. This latter concern extends beyond COR resources to UC MEXUS and other internal sources, e.g.,

“One thing that has concerned me has been that two of the funding sources which I should be able to use in the University, UC MEXUS and my own Division, have no feedback process. Thus it becomes difficult to know how to improve unsuccessful proposals – and in the case of UC MEXUS, after a while one begins to wonder if it may not be a somewhat closed club – or perhaps just a tree not worth barking up. My latest proposal to UC MEXUS was ‘accepted’ but not ‘funded.’ This doesn’t make any sense to me.”

Equipment and Computing Problems

n = 158, Mean Valence = -1.47

Every campus reported some degree of dissatisfaction with electronic communication systems, access and support for computers, access to appropriate laboratory equipment and other equipment problems. Computer access was particularly problematic on several campuses. The severity of the computer access problem varies from campus to campus and from department to department. A probable ‘worst case scenario’ is this:

“My department does not supply faculty with computers, software, printers, or modems – not even phone lines (for which we must pay personally if we want a telephone in our offices). Nor is such equipment available from any other campus source. Faculty are not even permitted to use computer equipment in the department office. On one occasion, for example, I was refused permission to use the department laser printer to print out an article I needed to send to a journal when my printer at home had broken down – I was told that it was for administrative use only. Nor does my department, or any other office on my campus, offer any significant assistance in using personally acquired equipment (e.g., loading software, setting up e-mail, troubleshooting problems, etc.). Adequate support staff for computer use is absolutely essential. In a period in which faculty salaries have been declining in real terms, the ever greater expenses we are being asked to assume to keep up with technology loom larger and larger.”

This person’s experience with both out-of-pocket expenses and with lack of computer support are shared by others.

“It is my understanding that we will soon have to pay \$10 a month for e-mail access. It’s hard to say how demoralizing that news is. One gets the sense at the UC System that the basic principle is to nickel and dime the faculty wherever possible...but now the nickel and diming will be extended to one of the principal vehicles of academic communications, e-mail. And \$120 per year - to my mind - goes way beyond nickel and diming. Maybe there’s nothing to be done about it; but it is rather depressing all the same.”

Another sense of dejection from another faculty member: “Academic computing ‘support’ and ‘service’ are a joke at UCB... General lack of support, particularly for computer-based research, has made me look seriously at moving to another university.”

Lack of Research Supports

n= 183, Mean Valence = -1.44

A large number of faculty members believed that the University simply did not support the research enterprise. Very commonly, faculty members spoke of the University expecting the faculty to bring in significant extramural funds, but not being supportive of that effort. Many people echoed this comment:

“Most investigators here would appreciate knowing that UC appreciates our efforts by some tangible show – some research support, some up-to-date facilities, UC-supplied secretarial support, telephones, photocopying, etc., and useful support services that are services, not merely roadblocks.”

Upon reading an early draft of this report, one faculty member said, “Yes, the University needs to remember that even the goose that lays the golden egg needs to be fed once in a while.”

The three remaining subcategories provide more information. The second most common concern was that the University did not provide fundraising assistance. Given the expectation of significant fundraising on the part of the faculty, there were many expressions of wish for assistance in finding potential funding sources, preparing grant applications, and especially, helping faculty members who were inexperienced in this area to develop skills in fundraising.

A third common concern was that the University did not provide adequate accounting and grant administration services. This was not an issue of providing high quality service, just not providing sufficient service at all. For instance, one faculty member reported not having received ledger summaries for the past two years. Others reported having to have their research assistants do ledger balancing because their administrative unit could not do it. In sum: “Accounting is horrendous - slow, unresponsive, etc. When coordination is needed, accounting is completely hopeless.”

A fourth element of lack of research supports was the lack of technical supports. Computer support services are dealt with elsewhere. This need was for technical staff to provide the wide range of technical work necessary for research.

“There is a [serious] lack of institutional technician support for general electronics, mechanical and electro-optical repair and assistance. More long-term employees are needed in this area to provide and ensure a corporate technical memory. This gives students a continuity that is absent otherwise, and would increase dramatically the experimental research output of the department.”

The desire for more stability in employment of technical staff is echoed by others:

“I am very disappointed in how technical support is provided. Within the department, technical staff are provided when the justification is teaching related. I think it is ludicrous to expect an ORU to support the research of 20-40 PI’s with administrative staff only and no technical staff.”

Indirect Costs

n = 137, Mean Valence = -1.66

The problem of indirect cost rates, and the utilization of indirect cost monies was a particularly hot issue for faculty who responded to this open-ended question. By far the biggest concern was that indirect costs were not being used appropriately. For most people, this concern focused on the inadequate or nonexistent return of indirect cost monies to the originating unit. It was very clear that the faculty felt this issue was so important that it amounted to a breakdown of the social contract of the University with its faculty: “The way that indirect costs funds are confiscated and used for purposes other than research support is terrible.” “Money from Congress is not being used appropriately, there is not enough money being spent on staff support for research.” “I must constantly pay for services that should be covered by indirect costs (such as secretarial help, telephone, and business office).” One person summed it up: “The non-existent return of indirect costs is illegal, immoral and unacceptable.”

There were some concerns expressed, especially at UC-Berkeley, that the indirect costs rates were too high, especially for some disciplines. This was considered to be especially true given that support services were in serious decline.

Less common concerns were that items that are assessed as indirect costs were still being charged as direct costs. If true, this is in direct contravention to the OMB A-21 guidelines. There was also a concern about the inequitable distribution of indirect cost monies, both within and across campuses. A number of faculty members said that they see no benefit from any of the indirect cost dollars they generate.

The intensity of the indirect cost money issue is reflected in the statements by some faculty that they were considering leaving UC because of this issue, as well as allegations that

existing policy is immoral, illegal, and so forth. People were concerned about this issue and many of them were very angry.

Time Constraints

n = 132, Mean Valence = -1.52

The next most commonly expressed concern was about time constraints. At first glance, this seems to be an issue “so much to do, so little time,” hardly a new or exciting insight for the world of academic research. However, the category is of interest because its elements reflect concerns from other areas. For instance, the biggest subcategory here is a series of complaints that increased teaching loads have taken a toll on research. Several people report that lack of replacements of VERIPs, along with increasing cohort sizes of students, and a perceived increase in less well-prepared students has made a significant difference in time available for research. A UC Davis faculty member sums it up:

“Substantial increase in the number of undergraduate students in the biological sciences at UCD with the accompanying increased instructional/advising workload coupled with decreased number of faculty, staff and graduate students. Faculty and staff were lost due to VERIPs and graduate student numbers decreased for a variety of reasons. This has resulted in a change in the research environment due to: 1) insufficient graduate students to TA (we’ve had to use undergraduates instead). 2) decreased activities in graduate instruction which tightly interfaces with research. The ‘richness’ of the research environment has been compromised with fewer younger scholars around. 3) Loss of faculty and staff means too many things to do with not enough time and manpower. What gets compromised is research.”

Faculty members complained about committees, administrative duties, and even “useless administrative tasks.” Of larger concern was that faculty were complaining of vastly increased amounts of time spent doing clerical work because departmental budgets have been slashed to the point where there are no funds for secretarial services. Other faculty members reported that they spend so much time writing grants that it interferes with research, another consequence of the shrinking extramural dollar. Further, faculty on some of the health sciences campuses report that they are spending more time generating clinical income to replace dollars their departments used to get elsewhere, to the detriment of research.

Finally, at UC-Santa Cruz, there were a series of complaints that the University administration, both locally and Systemwide, does not take the research mission of this campus seriously and so does not provide support for research time. Some faculty members reported that research was seen to be something that one did in one’s personal time, rather than as an integral part of the task of a faculty member. “There is an atmosphere that research is a “personal” activity rather than an expectation because of a general lack of support on the part of the administration.” “UCSC needs to be recognized by the Office of the President as a research institution and not as simply a teaching campus.” The faculty members who made these comments at UCSC were in both the biological and the social sciences, so this perception was not limited to one academic group on campus

Library Cutbacks

n = 102, Mean Valence = -1.57

There were locations of the University that served as lightning rods for concern. The library is one of those areas. The concerns were all the same: the lack of funds to replenish the libraries of the University of California is a disaster, not waiting to happen, but here already. While the electronic revolution may get us out of this hole, for the time being it is not a solution (in fact may be part of the problem). Whether journals or books, staffing or interlibrary loan efficiency, the libraries of UC are in trouble. How basic is the library? "It does not take much extra commitment to keep a research library going, but it is very easy to kill it. And when the library goes, we go." Or

"I believe this is the single most serious problem facing the research future of the UC system. The library on my campus (and I suspect elsewhere) has not been nurtured in this time of fiscal crisis. Libraries are both the starting point and the ultimate repository of all research. At the expense of many other parts of the campus, the library **DESPERATELY** requires help to meet its research responsibility. Even if funding returns to adequate levels in 10 years, there will have been a hiatus in acquisitions that will affect research for time immemorial."

Concerns About Students

n = 72, Mean Valence = -1.57

We now move to the categories where the numbers begin to be smaller. Certainly, these numerically small categories are less important than those where very large numbers of faculty members spoke. However, as a qualitative analysis, it is the presence of themes, rather than their size that is of major importance. This category is significant for being relatively homogenous. Only a few faculty complained about poor quality students. By far the most frequent concern about students was the inadequate funding available for graduate students. Particularly at UCSB, concerns about the high cost of out-of-state tuition were very prevalent. Some said that this caused difficulty in recruiting very high quality students who were not Californians. UCSD reported a "quota" on foreign students and thought this unfair. As a world-class research institution, faculty members were concerned that they were not being allowed to compete for the best students in the world. As one faculty member said,

"In my experience, the most difficult aspect of research at UC is the competition for graduate students. The high cost of out-of-state tuition, and the consequent difficulty in attracting the best graduate students, or even contemplating foreign graduate students, has a dulling effect on research."

Unfairness

n = 68, Mean Valence = -1.54

Perceived unfairness in the University environment, while commented upon by a relatively small number of people, can have a devastating effect on morale. The most

commonly reported sense of unfairness was reported by people in the humanities who believe that the University of California has significantly less interest in their fields than in the sciences. The strength of this concern on the UCSC campus is of particular concern. “In general humanities faculty are considered second class researchers. The University needs to take the lead in alleviating the poor morale among humanists, i.e., in recognizing excellence in Humanities research and addressing the difficulty of obtaining funding.” Or

“One problem that strikes me is in the culture of research here at UCSC - in which research is equated with monetary values: great research is big-money research, insignificant research is small money/no money work; great researchers get big grants, etc. Those in humanities and arts who have few outside resources available, and for whom relatively small amounts make significant differences, are totally pushed aside in discourse on research emanating from the AVC on Research. Applied research suddenly is pushed upon us as a savior, clearly because it brings in big grants, and this may lead to a profound change in our intellectual environment. The keenest non-science minds on campus become then far more vulnerable to attractive outside offers.”

In addition, a number of people report unequal access to resources, usually within departments or units, where it sometimes appeared that some department chairs had access to more resources than others. Others report inequities in space allocation. A few report cross-campus inequities in resources.

Extramural Funding Difficulties

n = 57, Mean Valence = -1.24

While everyone recognizes the difficulties of obtaining extramural funds in the 1990s, only 57 people complained about it, one third of whom are at UCSD. It is likely that this under-represents the level of concern about this issue, since the changes in the extramural research climate are reflected in the concerns brought up in nearly every category. The level of discouragement is significant in some cases: “For a while I was pulling in significant amounts in research grants. But federal money has been drying up, and I have decided to stop applying for research grants. My teaching and administrative duties take so much time as it is, and the hassles of applying for research grants are so great that it is hardly worth it.” The consequences for his/her career are significant, but this funding dilemma affects people at earlier stages as well:

“I have increasingly had my federal research grants cut or terminated in mid-stream, sometimes with only 30 days notice. This means that money for salaries is suddenly withdrawn leaving graduate students and post-docs, who believed that their salary is secure once they have received an offer, out on the street unless some money is found to support them. There are no provisions or mechanisms for remedying this, and neither are students or post-docs told of their tenuous situation. I no longer feel that I can make an honest offer to a prospective student or post-doc applicant, and this I find intolerable and inconsistent with belonging to a premier research institution.”

Negative Work Environment

n = 57, Mean Valence = -2.12

This is another small category, but to read the comments is painful. There are a number of faculty members who are completely demoralized and angry. A number of people attributed a negative work environment to factors related to the administration, ranging from “the administration is hostile,” to “the Chancellors and Deans do not communicate with ‘the people’” to a more specific statement that the “Dean and higher administration have combined to create the worst working and research environment possible (in the department of engineering).”

A number of faculty suggested that the UC environment focuses on the amount of grant money one brings in, rather than the quality of the research: “the research environment is not conducive to academic freedom and independence. Faculty are rewarded for the size of their grants rather than the quality of their research.”

A general sense of seriously low morale pervades these and other comments: “Recently, we’ve been told that we will have to compete for sabbatical leave in our department – a first in my 20 years. I feel that the University has declined terribly, the morale is low, and many faculty feel overburdened with the University’s constantly increasing demands.” Or

“I belong to those extremely pessimistic about UC retaining its standing. Education has taken a very sharp turn away from teaching/researching at a critical level. You cannot measure everything by money. While some of this is ‘temporary,’ it reflects a non-caring, non-understanding idea about the process by which creative research occurs.”

Colleagues: Negatives

n = 24, Mean Valence = -1.71

There were relatively few comments of a negative nature about colleagues on the faculty. The most common complaint was of work situations with a poor collaborative spirit. These included concerns expressed by newer or younger faculty members that senior or established faculty were not supportive. There were fewer reports of individual conflict, of the deleterious effects on quality of losing senior faculty and always having them replaced by entry-level assistant professors, and of departments, ORUs or other settings that suffered from poor leadership. The dissatisfactions reported probably reflect a larger group of such dissatisfactions, but need to be examined in the context of the overall picture of the categories. Thus, this category would be of much more concern if it were not for the existence of a much larger category of faculty members expressing the belief that the quality, collaborativeness, and helpfulness of their faculty peers were the best parts of the institution.

Out of Pocket Expenses

n = 18, Mean Valence = -1.61

There were 18 people who mentioned out of pocket expenses required for their teaching or research. This is undoubtedly an understatement of the scope of personal expenditures by faculty members. People reported having to pay for secretarial and administrative assistance with personal funds, of having to cover half of their research costs from their own pocket, of paying telephone, FAX, copying, office furniture, computer, and postage out of pocket. Several people commented on the difficulty of salaries that shrink in real dollars at the same time that out of pocket expenses are increasing:

“I work in the humanities. Basic support for long-distance telephone, for example, crucial for research, has been taken away. I spend my own money on postage, telephone, fax machine, software, because these things, some once provided, no longer exist. I have received some money from the dean for research in the last two years, for attendance at conferences and essential research travel, but have been told this source will no longer be available. Our salaries, shrinking in terms of cost-of-living, are also shrinking in relation to the necessary expenses of doing our jobs.”

While out of pocket expenses for research are reported here, so are more basic costs associated with a dilapidated infrastructure:

“It is most frustrating, the lack of support for telephone, fax and photocopy expenses. Many calls and copies are made on behalf of the University (for teaching and service) or as part of collaborative research prior to writing research grants. It is unfair to charge our grants or demand personal funds for these expenses. Similarly – the physical facilities are dilapidated. We must buy our own office furniture – pay for floors to be waxed and our windows cleaned. I feel as though UCLA will soon be charging me rent for my office. Meanwhile, offices of administrators, facilities managers, university accounting and payroll, etc. are greatly enhanced. New desks, fancy chairs, etc.”

While the qualitative analysis reported here is clearly unable to evaluate the extent of out of pocket expenses by faculty to fulfill the teaching, research and service aspects of their positions, it does make it perfectly clear that this exists on all campuses and it does not discriminate among academic groups, although the more poorly funded parts of the University will, naturally, be more vulnerable. Questions of scope will need to be addressed in another venue.

Categories of Enthusiasm

After these many pages of concerns, it is heartening to come across the 17% of specific issues that referred to the most rewarding aspects of faculty life at UC. It is important to remember (a) the open-ended question came at the end of a six page questionnaire designed

to evaluate the adequacy of University research resources and intended to identify any problems that exist; and (b) the open-ended question asked people to write about both the most frustrating and most rewarding aspects of life at the University of California. The resulting comments regarding rewards then can be seen in either a “glass is half empty or half full” (actually 17% full or 83% empty) light. The valence of these positive categories is somewhat higher than the corresponding negative categories. (Mean Valence of Positive Categories = +1.84, $s = 0.21$; Mean Valence of Negative Categories = -1.59, $s = 0.17$). The three primary positive categories were High Quality of Research Support ($n = 140$), Positive Comments About Colleagues ($n = 115$), and High Quality Students ($n = 48$). The remaining four categories each had fewer than 30 respondents: Satisfaction with Equipment/Computing, COR and other UC Funding, High Quality of the Libraries, and Appreciation for New Space.

High Quality of Research Support

$n = 140$, Mean Valence = +1.66

Forty-two percent of the satisfactions expressed with the support received from the University were comments on a supportive Department, ORU, or Institute. Others reflected enthusiasm about support provided at other levels of Campus Administration. For instance:

“As a spokesperson for a major international collaboration, I deal with the problems that other institutions face. I feel that the support I receive here at UCI is many times better than that received by my collaborators at other institutions. The climate is one of support for our research efforts and not hindrance. This in no small measure allows us to take the lead.”

A significantly supportive aspect of the research environment is the freedom to do whatever research one wishes: “Most gratifying to me is the freedom to work on whatever I want. This freedom is modified by various limits (access to resources, time, etc.) but as an ideal to which most pay a great deal of respect it is great.”

Other sources of positive support, endorsed by fewer people, were the existence of capable and highly trained technical and support staff, and a few mentions of the various research administration centers that also engendered complaints from others: Contracts and Grants Offices, Environmental Health and Safety, Animal Care Facilities, Committees on Human Research, Intellectual Property Offices, and help with fundraising.

Positive Comments about Colleagues

$n = 115$, Mean Valence = +1.98

The enthusiasm about colleagues was, in most instances, vigorous, and revolved around one of three issues: the high quality of colleagues, the existence of excellent collaborations, and the helpfulness of colleagues. The following comments are illustrative:

“UC has many high quality and dedicated faculty, staff and an outstanding student body that provides excellent and unparalleled research opportunities and a stimulating and exciting intellectual atmosphere. It is sad that this true strength of this University fails to be recognized amid the more highly publicized problems that are secondary to the mission of the University.”

“I am at UC solely for the intellectual environment – my colleagues are great and stimulating, as are the students and fellows.”

Many statements reflected true excitement about being on a campus that was in the forefront of many areas of research. Many remarked that the barriers to collaboration are very low.

High Quality Students

n = 48, Mean Valence = +2.04

Faculty members reflected on the quality of students, identifying the rewards of teaching and fostering the development of students as primary rewards of working at UC. The statement that “it is great to work with graduate students and watch undergraduate students grow” pretty much sums up the opinion of faculty.

Equipment/Computing

n = 29 , Mean Valence = +1.48

A few faculty members were satisfied with the quantity and quality of computer and network services and support. “The access to the Internet and the networking of the campus has been enormously beneficial and has accelerated my research and offered much new material for teaching.” Such sentiments were more commonly reported at UCB than at any of the other campuses.

COR, etc. Funding

n = 29, Mean Valence = +1.83

In this period of declining resources, a few people found the support of local Committees on Research to be critical to maintaining their research careers: “The continued support of Academic Senate grants through COR is most gratifying – especially in times when NEH and other humanities granting funds are very difficult to obtain.” Or:

“On the positive side, I am grateful to the Committee on Research on my campus which has funded all my research requests to date to the extent that its rules allow. Thus far, my research has not involved significant travel. I anticipate that it soon will, however, and I am hopeful that funds will continue to be available at least at the existing levels. If faculty salaries continue to decline in real terms, research support in all forms becomes even more essential if research is to remain a condition for retention and advancement.”

Other UC sources of funding that faculty members mentioned included: President's Research Fellowship, UC-wide Institutes, Dean's supplements, and help from the campus Office of Research.

High Quality Library

n = 26, Mean Valence = +1.81

Of the 26 people who praised the quality of UC libraries, nearly half were at UCB. Even statements enthusiastic about the libraries were often paired with concerns about their resources and future:

“Berkeley remains a great place to do research. The library resources are vast, and there is considerable and considerate assistance. Above all, there is an atmosphere and attitude conducive to research. However, there are problems. There is great pressure on the library which is the key to research in my field. Space is at a premium and facilities are often crowded. Getting more services on-line would help.”

Appreciation for New Space

n = 14, Mean Valence = +2.07

Finally, the 14 faculty on six of the nine campuses who reported that they had been given new and adequate space were enthusiastic about that fact.

Patterns of Variation in Frustrations and Rewards

The remaining question for analysis concerns the extent to which there are systematic differences among the faculty in the types of frustrations and rewards they experience in the research environment at the University of California. The analysis focused on identifying campus differences, differences among academic groups, differences between men and women faculty members and differences by academic rank. We have used two indicators to examine these differences: the differences in relative ranking of concerns and a divergence analysis based on subgroup divergence from the overall sample in frequency of concerns. Tables 6 and 7 summarize the results of these analyses. While there are numeric analyses in these tables it is particularly important that numbers don't get in our way – our concern is with the patterns of difference, not the precise size of those differences. It is essential that the reader focus primarily on the patterns of concerns across subgroups.

Differences Among the Campuses

Do campuses within the University of California differ from one another in their concerns and satisfactions? University lore has it that yes, the nine campuses differ in many ways. This analysis endorses that view. The domain structure does relatively little to help us

see these differences, but if we examine the more detailed category structure, the differences emerge.

UC-Berkeley. The top five concerns for UC-Berkeley were: poor quality of support, lack of basic supports, library cutbacks, indirect cost concerns, and space. These rank very high for the overall sample and for each campus as well. It is only when we look at instances where UCB diverged from the other campuses by at least .15 standard deviations (either above or below the others) that we begin to see something distinctive about UCB. The two primary differences are (a) the very high salience of the library (both concern for cutbacks and appreciation of the quality of the UCB library system) and (b) distinctively higher morale, especially institutional sources of high morale, such as satisfactions with equipment and computing support and with research funding support by the Committee on Research. UCB is also higher than most other campuses in frequency of statements of satisfaction with the high quality of students.

UC-Davis. The five most frequent concerns for UC-Davis were time constraints, lack of internal research funds, poor quality of support, space concerns and the lack of research supports. UCD had more statements than other campuses expressing concern over a bad work environment, problems with time constraints, and statements of satisfaction about the high quality of students. The domains of the research and academic enterprise, while still very common at UCD, were less prominent than at the other campuses.

UC-Irvine. The top five categories at UC-Irvine were the poor quality of support, lack of basic supports, equipment and computing problems, the lack of internal research funds and space concerns. UCI was higher than UCD in the frequency of expression of concerns over a bad work environment. The frequency of equipment concerns was also higher than most campuses. Concerns about students, both quality and lack of funding for students, were also relatively common at UCI, compared to other campuses. Interestingly, UCI was higher than most other campuses in expressions of both high morale and low morale. This suggests that there is considerable diversity on that campus in the quality of the research environment. Whether this is diversity across academic groups or along some other dimension is beyond the scope of this analysis.

UC-Los Angeles. From this analysis, one might characterize UC-Los Angeles as the prototypical campus – the pattern of responses at UCLA is very similar to that of the average across all campuses. UCLA faculty members made statements about indirect cost concerns somewhat less frequently than other campuses, but otherwise, UCLA is right in the middle, with the top five concerns being the poor quality of support, lack of basic supports, lack of research supports, equipment problems, and with space concerns and the lack of internal research funds tying for fifth place.

UC-Riverside. UC-Riverside differs from the other campuses in several places. The top five concerns at UCR are equipment problems, lack of internal research funds, space concerns, the lack of basic supports, and satisfaction with high quality supports. UCR is, in fact, distinctively higher than other campuses in the level of its concerns about the inadequacy of equipment and computing resources. UCR also commented on intellectual sources of high

morale less often than other campuses. UCR faculty members commented on poor quality of supports less often than did other campuses.

UC-Santa Barbara. The five most common categories of comment at UCSB were: lack of internal research funding, lack of basic support, library cutbacks, poor quality of support, and space concerns. In the areas of concern about library cutbacks and unfairness, UCSB's frequency of comments were greater than other campuses.

UC-Santa Cruz. UC-Santa Cruz was distinctively different from the other campuses in the frequency of comments about unfairness. This was combined with fewer comments about high morale, including intellectual sources of high morale, positive statements about colleagues, and overall high morale than other campuses. Statements about the academic enterprise, while still very common at UCSC, were less common than at other campuses, especially space concerns. The top five concerns at UCSC were: time constraints, the lack of basic supports, lack of internal research funding, unfairness, and poor quality of support.

UC-San Diego. UC-San Diego faculty members expressed many more comments about the difficulties of extramural funding than did other campuses. They also made more comments about problems with the research enterprise and the lack of research supports than did most other campuses. the top five concerns were: poor quality of support, lack of research supports, lack of basic supports, space concerns and the lack of internal research funding.

UC-San Francisco. UC-San Francisco differed from the other campuses in three major ways: (a) a much higher frequency of positive comments about colleagues, contributing to a more prevalent sense of intellectual sources of high morale; (b) high concern about the indirect costs issue; and (b) high concern about the research enterprise, especially space problems and the lack of research support. There were no favorable comments about either space or equipment at UCSF. The top five categories for the UCSF faculty were: poor quality of support, space concerns, lack of research supports, positive comments re colleagues, and concerns about indirect costs.

Commonalities. In the context of these patterns of difference, it is critical to remember that the nine campuses were very consistent in sharing most of their most important concerns. Poor quality of support was the number one concern of the faculty as a whole and was in the top five concerns for eight of the nine campuses. The campus that didn't have this in the top five, UCR, ranked it sixth. The most common comments under poor quality of support were reports of problems with accounting, grants administration, contacts and grants or research offices, an excessive and inflexible bureaucracy and rigid regulatory committees. This is a very widespread experience across these otherwise very diverse campuses.

The second ranked concern for the faculty as a whole was lack of basic supports. This was ranked in the top five for all but two campuses. Of these exceptions, UCSF ranked it sixth and UCD ranked it eleventh. The lack of basic supports was overwhelmingly focused on the lack of secretarial services, followed by declining department budgets (whence comes the lack of secretarial services). It appears that the University has responded to financial

stringency by depleting the corps of support staff. In many cases, faculty who are paid faculty salaries spend far too much of their time doing clerical work.

The third ranked concern for the faculty as a whole was problems with space. Eight out of nine campuses ranked this in the top five. The exception was UCSC, which ranked space ninth. Problems with space were lack of research space, a deteriorating infrastructure, and poor quality research space. These and other widespread concerns across the nine campuses are clearly among the high priority problems facing the University.

Differences Among Academic Groups

Do academic disciplines differ in their expression of concerns and satisfactions? As with Part One of this report, published in May of 1996, we did not compare specific disciplines. Instead we clumped disciplines into six groups: biological and agricultural sciences, medical and related health sciences, physical sciences and math, engineering and computer sciences, social sciences, and humanities. In examining the top five concerns of the faculty as a whole, five out of six academic groups agreed on the priority of poor quality of support and lack of basic supports. The humanities and arts ranked quality of support significantly lower than did the other academic groups, probably because of less relevance of regulatory committees and less experience with extramural funding, with concomitantly less contact with grants administration and contracts and grants. The biological and agricultural sciences ranked lack of basic supports sixth, and ranked positive relations with colleagues and time constraints higher than did most of their colleagues.

In three additional categories, the humanities and arts and the social sciences differed from the other academic groups: space concerns, lack of research support and lack of internal research funds. Lack of internal research funds was much more important to these two academic groups than to the sciences. Library cutbacks ranked first and fifth with these fields, but only 11th through 17th for the other fields. Thus, we can see as many major differences among academic groups as commonalities among them.

Biological, Agricultural and Medical Sciences. The biological and medical science groups were very similar in the patterns of their response. For each of these groups their top four concerns were the poor quality of support, the lack of research supports, space concerns, and positive statements about colleagues. This latter category distinguishes these two academic groups from all others. The biological sciences also mentioned time constraints in their top five while the medical sciences discussed the lack of basic supports as number five. The biological sciences differed from the other disciplines most clearly in their satisfaction with the high quality of students and their affirmation of intellectual sources of high morale. The medical sciences differed from the faculty as a whole in their lower frequency of expressed concern about library cutbacks. This may be because either other aspects of the research enterprise are more important to them or because these disciplines have felt the impact of the library cutbacks less severely than other disciplines within the University. While cutbacks of journals on the health sciences campuses have been very serious in recent years, because these fields make use of monographs and books less often than journals, they may be less dependent on library holdings of books. In addition, there are much better

developed electronic databases for these disciplines than for the humanities and social sciences, thus mitigating the impact of journal cancellations.

Physical Sciences and Math. The physical sciences and mathematics differed from the other disciplines in very few ways. Their top five concerns were the lack of basic support, poor quality of support, space concerns, the lack of research support and satisfaction with high quality support. It is only in this latter category that they differ from the larger community.

Engineering and Computer Sciences. The engineering and computer sciences differed most clearly from other disciplines in their very strong expression of concern about funding of students. Many people in these fields expressed grave concerns about the effects of high out of state tuition for foreign students on the quality of students they were able to recruit. While they ranked the quality of their students as a satisfaction somewhat more frequently than did most other academic groups, they were clearly concerned about the impact of funding on quality in the recruitment process. They were also at the high end of frequency of comments about concerns about indirect costs, and the poor quality of support. They differed from the rest of the faculty in their “top five” concerns only by having concerns about student funding and quality coming in as their fifth most prevalent concern. For other academic groups, this concern ranked between 12 and 18.

Social Sciences. The top five concerns for the social sciences were: lack of basic supports, lack of internal research funds, poor quality of support, equipment concerns, and library cutbacks. They were less likely to discuss lack of research supports than were other academic groups. The social sciences, law and education joined the humanities and arts in their very serious concern about library cutbacks, ranking this as their second most frequent concern. They also joined the humanities in ranking equipment and computing problems higher than did the sciences.

Humanities and Arts. The top five concerns for the humanities and arts were: library cutbacks and the lack of internal research funds tied for number one, followed by lack of basic supports, time constraints and equipment and computer problems. The humanities differed from the other fields in many ways besides a much higher level of concern about library cutbacks. The lack of internal research money and appreciation of COR funding were very distinctive. This reflects the very severe extramural funding constraints experienced by the humanities in recent years. For many people in the humanities, the very limited Committee on Research funds are the only source of research funds available. The humanities also commented on the high quality of UC libraries more often than did other academic groups, and largely as a result of this, experienced more institutional sources of high morale than did most others. They also reported unfairness more often than did other academic groups.

At the same time as reporting high frequency of institutional sources of high morale, the humanities and arts reported positive collaborations with colleagues less often than did other academic groups, resulting in lower frequency of intellectual sources of high morale. While the frequency of concerns with unfairness and relative lower frequency of positive colleague relations may suggest a hostile professional environment, this should not be read too

strongly in this direction. The humanities are fields in which collaborative research is distinctly less common than in the biological or medical sciences, so the lower emphasis on collegiality may reflect simply this pattern of research. However, unfairness is an issue for people in the humanities, who sometimes refer to perceptions of inequitable distribution of resources between the humanities and other fields.

Summary. It is in the areas of concern for library cutbacks and appreciation for the quality of the UC libraries that we most clearly see the difference between the humanities and social sciences jointly and the other academic groups. For the humanities, library cutbacks were their most frequently expressed concern, while for the social sciences it ranked fifth. For the other fields, library cutbacks ranked much lower, between 11th and 17th. This ranking differential reaffirms suggestions made earlier about the medical sciences lack of expressed concern in this area – it appears that the drastic cutbacks in library resources of the past few years have hit the social sciences and humanities distinctly harder than the other disciplines, probably because of different types of needs from a library. Part of the reason for this differential damage is that the very strong reliance of the humanities and many social sciences on books, monographs, and documents as *primary data sources* far more than do the sciences. Thus loss of library resources hits these fields at the very center of their work.

The value of these rankings is determined by the reality they have for the on the campuses and academic groups described here. The information we have about campus differences suggests that academic groups may differ across the nine campuses – e.g., the perspectives of faculty members in Humanities at UCB may well be different from those of Humanities faculty at UCSC. Analysis of such campus by academic group interactions is beyond the scope of this analysis.

Gender Differences

As with other arenas, gender differences do exist in the pattern of concerns and satisfactions of faculty at the University of California. Women were more likely to report concerns in the research enterprise as a whole, and specifically in the lack of access to internal research funds. They reported more time constraints and were more likely to report low morale, especially in the categories of unfairness and a bad work environment. Some of this possibly reflects disciplinary differences between men and women. The time constraints issue may be partially due to the smaller number of women than men on each campus – for instance, as committee assignments get made, women may bear greater than their share of such assignments. Other hypotheses to account for this difference may be obvious for those with extensive knowledge of the situation of women faculty on each campus. While we do not have detailed enough information about the experiences of women faculty on the nine campuses, the domains in which they reported more concerns than did men are of concern. This is an issue that deserves follow-up investigation.

Differences by Academic Rank

There were relatively few differences in the patterns of responses by academic rank. Assistant professors commented on experience of high quality support very often – it was their second most frequent comment. Both associate and full professors ranked high quality of support as their 10th most frequent comment. Associate professors were more likely to express concern about library cutbacks than other faculty. Full professors were more likely to be satisfied with their access to equipment and computer support. It is difficult to know what to make of these differences, as they do not follow any readily interpretable pattern – other than offering a suggestion that full professors have better access to equipment than do their more junior colleagues.

WHAT DOES THE FACULTY WANT?

One runs the risk, after having gotten this far, of stimulating the reader to ask, “just what does the faculty want, anyway?” with the implication that we are impossible to please. It would be unfortunate if these materials were read that way. While faculty members on all nine campuses have many concerns, these concerns are not random nor are they capricious. By stepping back from these data a bit, one can ask the question in a more serious fashion – what are the things that are most important to faculty? Clearly, a stimulating and collegial intellectual environment is near the top of the list. Many respondents who listed litanies of serious concerns finished their discussion with a statement to the effect that “the intellectual companionship makes me stay here.” Alternatively, people who spoke of considering moving to another University were much more likely to be those who experience a bad working environment.

The faculty want to do productive and meaningful research and creative activity. For this to happen, they need more than an academic title and some teaching assignments. They need libraries that provide, on a consistent basis, the primary data and research resources that are essential to the creative and scientific processes. They need access to research funds – while the emphasis on extramural fundraising is inevitable, faculty also need some internal research funds to get new projects started and to fund research that is poorly funded by the external funding world, whether government or foundation. In obtaining extramural research funds, faculty need support services to making grant proposal writing, grant funding and grant management possible.

It is also clear that a number of faculty members fear that the intellectual environment at the University of California cannot withstand much more in the way of cutbacks in basic support. Few people were demanding that the University provide outlandish amounts of support services. Many more people were asking for safe and well-maintained buildings, the most basic office supplies and staff support and computer equipment and services that make the research and teaching tasks of the faculty possible.

Faculty members also want a good working relationship with administration. While 140 statements referred to the experience of substantially positive support from the administration, 288 statements reported significant concerns about the quality of support and

Table 2: The Qualitative Sample by Campus and Academic Group

GROUP	UCB	UCD	UCI	UCLA	UCR	UCSB	UCSC*	UCSD	UCSF†	TOTAL
Biological/PE/Ag	30	33	27	28	31	20	0	27	0	228
Medical	20	16	20	22	0	0	0	30	144	252
Physical Sci./Math	21	24	18	24	32	37	32	27	0	182
Engin./Computer	32	13	21	25	0	36	0	31	0	158
Social Sci./Law/Ed	29	22	21	16	29	27	28	21	0	192
Humanities	25	18	19	26	32	28	34	23	0	205
*Not known	1	3	2	0	3	1	1	0		11
Campus Totals	158	129	128	141	126	149	95	158	144	1228

*11 people removed the identifier indicating academic group prior to returning the survey. We are able to identify campus, but not academic group for these people. They are omitted from all analyses using academic group.

** UCSC has faculty in both the biological and physical sciences, but because of the structure of UCSC, it was not possible to separate the two groups in this table. All biological science faculty at UCSC are included in the physical science category.

†While the UCSF faculty represent a wide array of disciplines, because we had access only to departmental affiliation, there was no way to split them into more meaningful disciplinary groups, thus all are listed in a single category.

Table 3: Number of Specific Issues Coded

Number of Issues	UCB	UCD	UCI	UCLA	UCR	UCSB	UCSC	UCSD	UCSF	Total
1 Issue Coded	62	65	58	84	69	72	61	87	59	617
2 Issues Coded	59	43	25	37	36	53	24	47	51	375
3 Issues Coded	37	21	45	20	21	24	10	25	34	237
% With Only 1 Issue	39%	50%	45%	60%	55%	48%	64%	55%	41%	50%

Table 4: Domain Structure

DOMAIN STRUCTURE**	Raw Sample Size*	% of Specific Issues	Mean Valence	Weighted Frequency
RESEARCH ENTERPRISE	801	38	-1.53	2,665
Poor Quality Support	288	14	-1.65	964
Lack Internal Research Funds	183	9	-1.40	621
Lack of Research Supports	183	9	-1.44	625
Indirect Costs Concerns	137	6	-1.66	416
Extramural Funding Difficulties	57	3	-1.24	201
ACADEMIC ENTERPRISE	750	36	-1.54	2,468
Lack of Basic Supports	228	11	-1.53	764
Space Concerns	205	10	-1.58	660
Equipment Concerns	158	8	-1.47	512
Library Cutbacks	102	5	-1.57	380
Students (Funding/Quality)	72	3	-1.57	201
Out of Pocket Expenses	18	1	-1.61	58
LOW MORALE	149	7	-1.79	480
Unfairness	68	3	-1.54	186
Bad Work Environment	57	3	-2.12	205
Colleagues: Negatives	24	1	-1.71	79
TIME CONSTRAINTS	132	6	-1.52	478
INSTITUTIONAL SOURCES OF HIGH MORALE	267	13	1.74	835
High Quality Research Support	179	9	1.66	625
Good Equipment Support	29	1	1.48	106
COR, etc. Support	28	1	1.83	104
High Quality Library	26	1	1.81	115
Appreciation of New Space	14	0.7	2.07	41
INTELLECTUAL SOURCES OF HIGH MORALE	137	6	1.98	487
Colleagues: Positives	115	6	1.98	429
High Quality Students	48	2	2.04	163
OVERALL HIGH MORALE	348	17	1.79	1,199

* N = number of specific issues coded in each domain or category

** Frequencies of a domain do not equal sum of its categories because any one specific issue could be coded in two categories.

Table 5: Category Structure

NEGATIVE CATEGORIES

POOR QUALITY OF SUPPORT

Accounts/Grants Administration
Contracts & Grants/Research Office
Excess & Inflexible Bureaucracy
Rigid Regulatory Committees
Low Staff Quality
Cost of Services Increasing
Animal Care Facilities
Purchasing
Personnel
Patent Policy/Industry Relations
Academic Computing
Not Knowledgeable Administration

LACK OF BASIC SUPPORTS

Secretarial Services
Declining Department Budgets
Lack Basic Office Supplies
Salaries are too Low
Lack of Faculty Support
Janitorial Services

SPACE

Lack of Research Space
Deteriorating Infrastructure
Poor Quality Research Space
Distance/Inconvenient Location
Logistics of Moves
Inadequate Parking

LACK OF INTERNAL FUNDS FOR RESEARCH

Lack of Internal Research Funds
Lack of Travel Expenses
Complaints About the Award Process
Lack of Workshop etc. funding

EQUIPMENT/COMPUTING PROBLEMS

Computer Access
Computer Support Services
Email Access & Cost
Lack of Laboratory Equipment

LACK OF RESEARCH SUPPORTS

University Generally Not Helpful
Lack Fundraising Help
Accounts/Grants Administration
Technical Support
Hypocrisy of Intentions vs. Actions
Other

INDIRECT COSTS CONCERNS

Indirects Not Returned to Originating Unit
Indirect Costs too High
Direct Charges for Indirect Costs
Indirects Not Returned to PI
Indirects Not Equitably Distributed

TIME CONSTRAINTS

Increased Teaching Duties
Increased Committees/Admin Work
Increased Grant Writing Demands
Clinical Duties to generate money
Clerical Tasks
Work Overload
Administration Doesn't Support Time for Research

LIBRARY CUTBACKS

no subcategories

CONCERNS RE STUDENTS

Lack of Funding
Poor Quality

POSITIVE CATEGORIES

UNFAIRNESS

Humanities vs. Sciences
Unequal Access to Resources
Unequal Space Allocation
Cross-Campus Inequities
Other Unfairness

EXTRAMURAL FUNDING

no subcategories

BAD WORK ENVIRONMENT

Bad, but no details
Administration Creates Bad Environment
Focus on Money Instead of Quality
Lack of Appreciation of Efforts
Faculty are 2nd Class Citizens
Hostile Climate

COLLEAGUES: NEGATIVES

Poor Collaborative Spirit
Individual Conflict
Not Enough Faculty
Lowered Quality of Faculty
Unit Not Functioning Well

OUT OF POCKET EXPENSES

no subcategories

HIGH QUALITY OF SUPPORT

Dept/ORU/Institute
Freedom of Research Environment
Campus Administration
Technical/Staff Support
Contracts & Grants
Fundraising Assistance
Env. Health & Safety
Animal Care
Comm. on Human Research
Intellectual Property

COLLEAGUES: POSITIVES

High Quality
Good Collaboration
Helpfulness

HIGH QUALITY STUDENTS

no subcategories

EQUIPMENT/COMPUTING

Computer Access & Support
Networking Access
Labs/Major Equipment

COR, etc. FUNDING

no subcategories

HIGH QUALITY LIBRARY

no subcategories

APPRECIATION FOR NEW SPACE

no subcategories

The subcategories are listed under each category in order of frequency of occurrence, from most to least frequent.

Table 6a: Rankings by Campus

CATEGORY	TOTAL	CAMPUS								
		UCB	UCD	UCI	UCLA	UCR	UCSB	UCSC	UCSD	UCSF
Poor Quality of Support	1	1	3	1	1	6	4	5	1	1
Lack of Basic Supports	2	2	11	2	2	4	2	2	3	6
Space Concerns	3	5	4	5	5	3	5	9	4	2
Lack of Research Supports	4	8	5	6	3	8	7	7	2	3
Lack of Internal Research \$	5	6	2	4	5	2	1	3	5	9
Equipment Concerns	6	10	8	3	4	1	8	6	10	12
Time Constraints	7	11	1	8	8	10	13	1	11	8
High Quality Support	8	9	12	10	7	5	6	8	8	7
Colleagues: Positives	9	7	6	7	10	18	16	14	9	4
Indirect Costs Concerns	10	4	12	10	12	9	12	12	7	5
Library Cutbacks	11	3	16	13	9	6	3	10	14	15
Bad Work Environment	12	21	7	8	14	14	17	15	13	13
Student Funding/Quality	13	19	10	12	18	13	10	12	12	18
Extramural Funding	13	16	14	21	11	14	11	11	6	15
Unfairness	15	17	17	13	15	12	9	4	15	10
High Quality Students	16	13	9	20	21		18		20	11
Library Positives	17	12	18	19	17	18	20	18	15	18
Equipment Positives	18	14	15	16	15		14	20		
COR, etc. Support	19	14	22	15	20	14	15	16	18	17
Colleagues: Negatives	20	18	20	17	18	11	20			14
Out of Pocket Expenses	21		18	21	13	14	19	18	17	
Appreciation of New Space	22	20	21	18		20		16	18	

Table 7: Subgroups That Diverge From the Sample as a Whole

	Campus		Academic Group		Gender	Rank
	High	Low	High	Low	High	High
RESEARCH ENTERPRISE	SD, SF	D			Women	
Poor Quality Support		R, SC	Engin	Hum		
Lack Internal Research Funds			Hum		Women	
Lack of Research Supports	SF, SD			Soc Sci		
Indirect Costs Concerns	SF, B	LA	Engin			
Extramural Funding Difficulties	SD					
ACADEMIC ENTERPRISE		SC, D			Women	
Lack of Basic Supports		D				
Space Concerns	SF	SC				
Equipment Concerns	R, I					
Library Cutbacks	B, SB	D, SF	Hum	Med		Assoc
Students (Funding/Quality)	I		Engin			
Out of Pocket Expenses		B, SF		Engin		
TIME CONSTRAINTS	D				Women	
LOW MORALE	I				Women	
Unfairness	SC, SB		Hum		Women	
Bad Work Environment	I, D				Women	
Colleagues: Negatives	R	SC, SD	Bio			
INSTITUTIONAL SOURCES OF HIGH MORALE	B		Hum			
High Quality Research Support						
Good Equipment Support	B	R, SD, SF				Full
COR, etc. Support	B		Hum			
High Quality Library	B		Hum			
Appreciation of New Space		SF				
INTELLECTUAL SOURCES HIGH MORALE	SF	R, SC	Bio	Hum		
Colleagues: Positives	SF	R, SC	Hum			
High Quality Students	B, D	SC	Bio, Engin			
OVERALL HIGH MORALE	B, I	SC				