

## **Topics and Comments for the Research Strategies Working Group from the Campus Listening Forums and Academic Senate Meetings\***

### **Master Plan:**

Doctoral education is the domain of UC and should be preserved and enhanced. As such, research leading to doctoral training should be protected.

### **Research Mission and Principles:**

The University (including the Regents and the Commission) need to clearly state the mission and principles behind our research. This needs to include a clear statement about the importance and role of graduate education, as well as the intricate connection of research and graduate education.

Graduate student research also is linked to undergraduate education and research efforts. This needs to be explicitly stated in our mission and educational principles.

Explicit principles include collaboration, innovation, integrity, excellence, diversity, and service.

The influence of research on our undergraduate teaching needs to be explicitly stated – it's a major benefit of attending UC over institutions that are teaching-focused as opposed to research-focused. Researchers don't regard knowledge to be a fixed set of ideas, so they focus on critical thinking skills when teaching courses.

We need to develop and encourage greater opportunities for undergraduates to do research.

Recognize that research infrastructure is among the critical features of a first-class research university, and is one of two critical items that will keep top-notch faculty at an institution (the second being high quality students).

The administration at UCOP and on each campus should support and encourage research, rather than directing research. With regard to UCOP, internal funding priority areas should be determined through consultation with the Senate. Priorities should reflect faculty creativity and innovation, rather than being determined by the

administration. The same principle should be applied to the campus Organized Research Units and departments.

The broad spectrum of disciplines needs to be considered and valued in all aspects of research. Common values, as well as differences, need to be considered. Also consider public values and perceptions, as well as those within the University.

Organizational reforms accomplished through the Commission should result in operational excellence.

Innovation and creativity need to be encouraged.

UC needs to actively lobby for secure and stable research funding. Decreased funds result in decreased research and productivity. They also result in a vicious cycle: less research money leads to increased teaching which results in decreased time for research/grant writing and decreased funding.

UC's research vision must consider the future by supporting our younger faculty and students.

Private research endeavors allocate 5% of their funds to innovative research; UC should do the same.

Our working group needs to explicitly state the problems and the various alternatives for solving these problems (including trade-offs).

We need to articulate our principles with regard to industry research and technology transfer: public good, translating research into practice, patents and revenue generation, making research products broadly available / cheap, etc.

Research must include scholarly creative activities.

### **Advocacy:**

Need to identify UC research efforts that benefit the public in California, USA, and globally. Example of BART tunnel retrofit that saved the State millions of dollars.

Need to identify UC research-related benefits such as biotechnology companies started by UC graduates and faculty.

Need to work with local communities (mayor, school board, city council, county supervisors, other higher education institutions) to partner on research endeavors, internships, and conducting research relevant to the local community.

### **Research and Education:**

See principles statements noted above.

Consider increased opportunities for cross-campus collaborations in research and education; remove barriers between programs.

Research is taking the brunt of State cuts. For example, Title VI funds are being cut in centers that are both education and research focused, but the research side is receiving greater cuts.

Increased funds for education in undergraduate research-related courses is needed: servers and equipment in engineering courses, laboratory equipment, deferred maintenance of laboratory teaching facilities, etc.

Basic renovations of research facilities and deferred maintenance are not being funded – our facilities are deteriorating and it's affecting recruitment and retention of faculty and graduate students (it has a greater effect than low compensation).

### **Faculty and Graduate Students:**

Concerns with recruitment and retention: total remuneration, research resources, and quality of graduate students to attract and retain top faculty.

Need for greater flexibility in paying faculty salaries (need more than summer salary options).

Concern with graduate student fee increases and diminishing support, cuts in TA and RA positions and funding, and increases in costs of living.

Consider stabilizing graduate student fees upon admission (e.g., fees cannot rise beyond a given level each year), as well as guaranteed support for X years. Stabilize funding for post-doctoral fellows.

Consider loan forgiveness programs for graduate students across all disciplines. This also could be linked to URM graduate students / post-docs becoming UC faculty.

Concerns regarding graduate student fees, including having graduate students pay fees from grants and contracts, with money returned to University vs. affordability and productivity of post-doctoral fellows. Large proportions of graduate students at many campuses are not supported by grants or contracts.

Increased support for graduate student research fellowships is needed to support innovative research that often isn't funded by traditional grant mechanisms.

Graduate student and post-doctoral fellow training should include professional development training, including experiences in academics, NGOs, industry, foundations, etc. Students should learn about different opportunities as well as different models for doing research. UC alumni could assist in this effort.

Graduate student and post-doctoral fellow stipends / salaries need to consider cost-of-living issues.

Academic personnel issues related to research need to be considered, including representation in shared governance (e.g., Academic Federation at UCD), competitive salaries for non-Senate faculty and academic appointees, etc.

Need to decrease constraints placed on international graduate students.

### **Incentives and Disincentives:**

Academic personnel review processes should reward collaborative research efforts (examine potential for this in humanities and social sciences).

Incentives for increased faculty research efforts in the humanities and social sciences need to be explored and developed.

Teaching loads need to be considered: most of our competitor institutions have lower teaching loads. This needs to be especially considered in the humanities.

We need to decrease bureaucracy and encourage research (as done in private Universities).

Teaching buy-outs need to be examined across campuses, disciplines, and funding agencies.

### **The Administrative and Management Costs of Research:**

We need to develop and evaluate data on the real costs of doing research (support staff, administration, purchasing, utilities, education, etc.). These costs need to be covered through indirect costs or through a centralized pool of funds (at the campus or OP).

Savings and efficiencies in administrative services need to be realized so that savings can be re-directed to directly fund research.

Costs of support staff and resources should be supported.

Consolidation of staff services should be considered (see UCLA's report on ORUs).

Need more support staff and fewer top administrators (pay particular attention to the number of Dean's).

Costs and funding for research facilities need to be considered in addition to capital projects. Can Garamendi-type funds for research facilities be established (e.g., ships at the Scripps Institute)?

Maintenance of research facilities and laboratories is being deferred; this has an adverse effect on faculty and graduate student recruitment and retention.

What is the role of the State of California in funding UC's research efforts? What should be the role of the State?

Consider the pros and cons of centralized support for research, including purchasing, preferred vendors, etc. Consideration should be given to greater flexibility and common sense.

Consider a non-profit foundation for the entire University of California system that would be the administrative unit for research grants and contracts. The performance sites would be the different campuses. The foundation would contract with the different campuses for space and utilities and other infrastructure support. It might even be the contractor on behalf of investigators for technicians, project scientists, and other research personnel without teaching or other faculty responsibilities. The foundation would be responsible for intellectual property management and would apportion royalties, licensing fees, etc. to the campuses and individual investigators according to their contributions. The foundation also would be able to solicit donations for research for specific programs or general support of research, such as the issuance of RFP's for pilot projects and fellowships. There would be economies of scale besides consolidation of services. The other benefits include obtaining group discounts from suppliers of equipment, research reagents, and services. The foundation approach also could facilitate more inter-campus collaboration since it would be the clearinghouse for research, and it would be in its interest to foster those trans-disciplinary multi-investigator applications that are going to be more in demand in the future.

### **Internal Research Funds:**

Internal funds for research need to be expanded (e.g., Academic Senate Committee on Research funds, MRPI funds, UC Discovery Fund). These funds should largely be directed to creative and innovative research (e.g., pilot studies) and for bridge funding.

Create separate endowments on each campus to support research.

Selection of faculty and programs for internal research funds should be competitive, fair, and transparent. RFP's should be issued to allow for broad participation (don't use the process used for selecting projects for the SuperComputer research funds). Reviewer's comments should be provided to applicants.

Utilize metrics for evaluating success and productivity of ongoing programs before continued funding is awarded (see metrics developed by the Compendium Task Force).

Campus Research Centers and Organized Research Units (ORUs) are being cut dramatically and it's affecting both research and educational efforts.

Cross-campus collaborative research needs to be enhanced and encouraged, as does within campus collaborative research.

Cross-subsidy of research efforts in various fields needs to be examined and made transparent (e.g., indirect costs from science research subsidizing research in the humanities). Is this real? Can it be improved or enhanced? We need a forum to discuss funding for humanities and social science research.

Need centralized funds at campus and/or UCOP to use as matching funds for expensive equipment purchased through federal funding sources.

### **Indirect Costs (IC) and Indirect Cost Recovery (ICR):**

Note above question on developing and evaluating the real costs of doing research. This data needs to consider both on-campus and off-campus costs of doing research.

Transparent and informative data is needed on how IC are determined, how they are spent, where they are spent, etc.

What is the difference between the real costs of doing research and the money brought in through indirect costs?

Examine data on IC waivers and low IC rates. How many waivers are requested at each campus and systemwide? How many requests are approved? If waivers are denied or approved at lower

rates, what is the effect on summer salaries and on graduate student research?

What is the role of cost-sharing, where do cost-sharing dollars come from, and how do we determine when and when not to provide cost-sharing? Are the rules surrounding cost-sharing creating any barriers? Can the internal cost-sharing rules be modified so the burden and bureaucracy is lessened?

Examine indirect costs of doing State-sponsored or funded research: is the State covering the costs of these projects?

Can indirect costs rates be increased for industry sponsored research? Can these funds be used to create a pool to cover the costs of conducting research when the indirect costs have been waived or significantly reduced?

The University needs to develop flexible and logical definitions for defining gifts vs. grants, with waivers approved more frequently for gifts and less frequently for grants.

Consider returning a portion of indirect costs to the faculty who generated it to serve as discretionary fund for purchases, IT support, etc.

Will increases in indirect costs make UC less competitive? Will it work against us in the short term or long term?

Grants that don't pay overhead often provide support for graduate students and post-docs.

Consider infrastructure cost differences between different disciplines.

### **Research Services and Support:**

Examine best practices on each campus and identify elements or programs that can be adopted on all campuses.

Consider centralizing indirect cost calculations and negotiations with agencies.

Examine whether services should be centralized at the campus level or at the system-level. Consolidate staff services wherever possible. Re-direct redundant staff.

Develop and cultivate a service-oriented culture among staff (as opposed to serving as barriers or regulators).

Consider rotating internships for research staff career development: for example, spend one week of every quarter in another department so you learn their policies and procedures to enhance collaboration, support, and best practices across units. Also

consider staff sabbaticals to serve in an identical home unit on another UC campus or at UCOP.

Research support services should be done with a service orientation and team approach. We are all in this together....

New technologies required to support research (and education) are neither obtained nor implemented. We are not keeping up.

### **Compliance and Risk Management:**

Faculty are spending increasingly large portions of their time in compliance activities and administrative functions. Administrative burdens need to be decreased and we need more support staff to provide services.

Risk management has evolved into a philosophy of bringing risk to zero rather than managing it. This has stifled creativity and innovation. This is true for all fields (e.g., the Arts faculty have difficulty with licensing and shows).

Staff turn-over and lack of continuity have made compliance activities more difficult due to the resulting lack of familiarity with procedures and regulations, less flexibility and less creative problem-solving.

### **Technology Transfer and Private Industry:**

Some campuses have seen improvements in the service provided by these offices. Others are not as helpful.

Many campuses mentioned that the technology transfer office is a money-losing venture, particularly with the net cost associated with licensing and patent prosecution. Can services be improved and efficiencies enhanced?

A cost-benefit analyses of the Technology Transfer activities on each campus is needed.

Creativity needs to be encouraged and assistance provided in patent development (including assistance with fees).

A large amount of economic development in CA can be attributed to UC IP. If our primary focus was on economic development and not on UC revenue streams, UC might have better relationships with industry, have more industrial sponsorships of our research enterprise and be seen as providing a greater service to the State. Right now, industry views us as an organization that is out to get rich.

Concerns regarding privatization of University, academic freedom, marketization of UC, etc., particularly in collaborations with industry (commonly cited example was BP funding at UCB). Concerns that privately funded research should not take priority over publicly funded research.

We need to consider strategic enhancements with industry, including decreasing restrictions. One of the biggest challenges that faculty face in working with industrial partners is in restrictions that are imposed by the companies with respect to proprietary information, and restrictions that are imposed by the government in terms of ITAR (International Traffic in Arms Regulations). The University of California does not allow research to be conducted, either on or off campuses, with such restrictions. There are many universities that do allow for external institutes or entities to conduct such research, and we should closely examine their policies.

### **Support Services for Research:**

Libraries are being cut and librarians feel unsupported. People misunderstand the role of libraries and librarians in teaching research methodology, as well as the effective and ethical use of materials.

Too much funding goes towards the California Digital Library as compared to the standing libraries.

Collaborations with libraries outside of UC should be developed (e.g., Cornell and Cal Poly collaboration with UCD Vet School library).

The Human Resources classifications are not always appropriate with regard to research, and they often make it impossible for us to pay competitive salaries to recruit appropriately skilled people. An example of this arises in the interface between experimental particle physics and computer science & engineering. To do this research well, one needs to have a first class research and development engineer on the team, but the HR department does not have any job classifications appropriate for such people, unless they have a Ph.D. Without a Ph.D., these engineers are classified as computer maintenance personnel and paid significantly lower salaries. We cannot compete with private industry to hire these people with our current salaries and job titles/descriptions.

**Additional Issues of Concern:**

Vice Chancellors of Research are difficult to recruit. They are given very few resources and/or funds with which to bring about real change (e.g., sufficient number of IRB committees and staff).

Federal research funds are likely to decrease again and the drop will feel significant with simultaneous declines in federal stimulus funds.

Need to enhance diversity among UC faculty, staff and students doing research (may lead to more research on diverse populations).

Scholarly publications and academic publishing need to be considered.

**Additional Literature to Obtain:**

1. UCLA report examining Organizational Research Units
2. Report to President Atkisson examining economic benefits of research done at UC (John Ellwood from UCB was a co-author)
3. UC's long-range guidance report from 2005 (pay particular attention to expert witness statements)