FINAL

Report
by
Senate Task Force on University-Industry Partnerships

Principles and Guidelines for Large-Scale Collaborations between the University and Industry, Government, and Foundations

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I. Introduction

Following the role played by the Berkeley Division of the Academic Senate in advising in the negotiations over the Energy Biosciences Institute (EBI), the Divisional Council (DIVCO) appointed a task force to produce a report for the Berkeley Division's consideration to offer principles governing future major University-industry partnerships. The composition of this task force included the five members of the ad hoc advisory committee to the EBI contract negotiations, plus other members of the Senate with expertise in relevant areas, as nominated by the Committee on Committees.

We were charged with considering the following issues: the net benefits to the University from collaborations; when and how the Senate ought to be notified and subject to review certain collaborations, including guidance about the respective roles of administration and the Senate in negotiating and reviewing proposals; the application of principles of academic freedom to these collaborations; the role of established practices in academic personnel actions and FTE allocations; potential conflicts of interest; intellectual property policy matters; and any other matters that the Task Force found appropriate. We were also asked to consider issues related to partnerships with the federal government and foreign governments.

We were asked to take into account the following documents: Cornell University's *Faculty Statement of Principles & Best Practices Concerning Strategic Corporate Alliances* and the *External Review of the Collaborative Research Agreement between Novartis Agricultural Discovery Institute, Inc. and The Regents of the University of California,* conducted by the

Institute for Food and Agricultural Standards, Michigan State University. We also reviewed the report of the Senate Ad Hoc Committee on the CNR/Novartis Proposal (1998); the Administrative Review of the Novartis Agreement (2002); the responses to this review by the Committee on Academic Freedom, the Committee on Academic Planning and Resource Allocation, the Committee on Research, and the Graduate Council, and the document "In the Public Interest: Nine Points to Consider in Licensing University Technology," of which the University of California is a signatory.

Furthermore, over a series of meetings we invited several guests with a range of relevant perspectives and information on issues related to University-industry partnerships. We met with Vice Chancellor for Research Beth Burnside, Assistant Vice Chancellor for Intellectual Property and Industry Research Alliances Carol Mimura; and in their individual capacities Professors David Hollinger (History, former chair of BIR), Todd LaPorte (Political Science, former chair of COR during the Novartis review), David Mowery (Business Administration, expert in University-industry technology transfer), Robert Merges (Law, expert in intellectual property), David Patterson (Electrical Engineering and Computer Science, major participant in industry collaborations), and Anne Wagner (History of Art, a participant in EBI debates). These meetings garnered further information on organizational issues in University-industry partnerships, on the value and risks of University-industry partnerships, on issues related to intellectual property of research produced within the University and on technology transfer, on the importance of due process within the University on the establishment of such partnerships, and on the perspectives of researchers involved in University-industry partnerships.

We have written this report trying to address a wide range of possible issues that may arise in future University-industry partnerships. However, the proposals presented in this report should be interpreted with flexibility as there may be other unforeseen issues in future proposals which we may have failed to consider. The relative importance of these University-industry partnerships will also differ across fields, and the University should implement these proposals with respect for the different acceptable practices within particular fields and disciplines.

Finally, we add some notes on terminology. First, we use the terms "collaboration" and "partnership" interchangeably. We use these terms to distinguish the research endeavors at issue from both individual (or group) investigator-based sponsored research, on the one hand, and from turnkey or gift-sponsored research. While not all the collaborations at issue are, in legal terms, partnerships, all will involve continued involvement in research and often governance by both University and sponsor personnel, usually by establishing a new research entity, such as the EBI, or the Intel Research Laboratory. Second, as we mentioned above, we took as our charge establishing principles to govern collaborations with governmental entities, both domestic and foreign, and foundations, as well as with for-profit companies. While some of the intellectual property issues we discuss are specific to corporate sponsors, other issues generalize appropriately. As a result, our use of the term "sponsor" will generally range across all sorts of entities. Third, we restrict our attention generally to what we call "large-scale collaborations," where the scale is a function of multiple possible factors, including funding amounts, effects on campus space and resources, duration, and academic personnel issues. (For the purposes of this report, "Academic Senate" refers to the Berkeley Division, unless otherwise noted.)

Here is a summary of the report. Section II discusses the general benefits and risks of large-scale sponsored research activity. Section III discusses the triggers, or indicators, found in proposals for collaborations that, in our view, merit at least Senate notification and potential review, and the form of that review. In this section we also discuss some substantive principles that we feel should inform the Senate review, and structure the design of the new entity. In Section IV, we cover ethical considerations affecting possible collaborations, as well as governance and reporting structures responsive to these concerns. Section V discusses principles for the governance structure of a University-industry partnership, both internal and in its relation to the Senate. Section VI covers academic personnel issues, and Section VII discusses principles for grant-making processes. Issues of financial return to the campus are presented in Section VIII, and Section IX discusses intellectual property matters. Section X covers academic freedom and proprietary space concerns, and conflict of interest and conflict of commitment issues are discussed in Section XI. Finally, Section XII addresses the complementary question of sponsored projects of such minimal institutional impact that they should be afforded expedited approval by the Vice Chancellor for Research (VCR) office. While this last item was not in our formal charge, concerns about over-scrutiny of small projects presented themselves naturally during our inquiry, and this report is an appropriate place to address them. Section XIII concludes.

II. The Value and Risks of University-Industry Partnerships

In the context of UC Berkeley, the last few years have seen a stagnation of state funding and changes in the character of federal research support. These changes have made it increasingly important for the University to seek out new sources for research funding. While industry funding has always played a significant role in Berkeley's research mission, in the years ahead, we anticipate that Berkeley will look more towards industrial partners for funding in the face of changing federal funding.[1] This may especially be true for financing large, infrastructure-heavy research areas in the biosciences and engineering, where industry also seeks to build out its in-house research capacity. Indeed, it is possible that hybrid university-industry collaborations may replace some of that in-house research.

As a general principle, we have come to conclude that industrial research funding should be treated on par with funding coming from governmental or nonprofit entities, all other things equal. In other words, the attractiveness of accepting research funding should be evaluated based on the merit of the research being funded and the various terms and conditions attached to that funding, not based on the *category* (industry, government, nonprofit) of the entity providing the funding. While, in principle, publicly-funded research might be thought to reflect a greater convergence of interests between the University and the sponsor, with the public good as the aim on both sides, public funding is decided by individuals in public institutions which may deviate at times from the public good objectives, and industry funding may lead in specific cases to projects that are important to achieve the public good. We learned during our investigation that in many cases there are more "strings" attached to government funding than industry funding, rendering false any presumption that industry-sponsored research is more restrictive.

[1] The external review of the Novartis agreement contains an extensive history of industry supported research at Berkeley.

Industrial collaborations bring one large and obvious benefit to Berkeley researchers, including faculty, students, and post doctoral fellows: they provide resources, in some cases very substantial resources, to conduct research. They also add to the diversity of sources of funds for research conducted at Berkeley. In this section, we discuss additional benefits, and the risks associated with industrial collaborations.

Enhanced Impact of Research

Working with industry can enhance the impact and importance of research conducted at Berkeley. In many fields, especially engineering, industrial partners have information about important real world problems that may be quite useful for the research agenda of Berkeley researchers. While our faculty may be very well placed to identify research questions that are intellectually interesting and challenging, we can benefit from additional input regarding which problems may be more important in the real world for greater research impact. This is especially true if research is funded simultaneously by a number of companies that occupy and compete within the same market segment. In those situations, frequently encountered in research centers, research tends to gravitate towards pre-competitive subjects, ensuring that valuable university effort is not narrowly focused on short-term results.

In some cases, industry also pushes the state of the art, making it especially important for Berkeley researchers to be aware of what industry has accomplished and what they are currently trying to achieve, so our research efforts can complement rather than duplicate those of industry. Although not central to the university objectives of basic research, collaborations can also help the public good by facilitating and accelerating technology transfer if the research results prove valuable in practice, and have immediate practical impact. In this context we recognize that while impact can be measured in many forms (such as citations), successful technology transfer of research ideas is one valid measure of research relevance to society.

Other Benefits

Industrial partners can provide access to valuable data. They also can provide a reality check on any assumptions made by researchers. Working with industrial partners can help students build valuable professional skills.

While the academic research environment can be quite unstructured, encouraging creativity, working with industry can provide additional structure that encourages students to make clear presentations to varied audiences, work in teams, and be subject to disciplined design reviews. These experiences can be very valuable to students, regardless of their future career choices. Industrial participants sometimes help advise students and teach at Berkeley, therefore reaching wider academic audiences.

Developing working relationships with industrial partners can greatly facilitate job placement for students. These relationships can be especially valuable in providing attractive jobs for all students when they graduate, not just the "star" students who achieve greater visibility through conferences and publications.

Risks Associated with Industrial Funding

Industrial sponsors are often motivated in large part by their own institutional goal of earning profits for their shareholders. Such profit motives may or may not line up well with the University's broader public-interest mission. A generic danger in large-scale industrial collaborations is that scarce resources at Berkeley, especially faculty time and effort, will be diverted towards projects that are of greater interest to an industrial partner than to the public at large. The financial stakes grounding the collaboration also make possible financial conflicts of interest for academic participants.

While we recognize and acknowledge this danger, we also believe it can easily be overstated, even when the research is funded exclusively by a single industrial sponsor. In a great many cases, the research projects of interest to industrial partners will also generate substantial benefits to the University and the public, especially given our standing rules insuring the right of publication. Our policies regarding intellectual property rights (see below) also work to insure that the University and the public benefit from research sponsored by industry, even in those cases where the industrial partner ultimately obtains an exclusive license to some of the patents resulting from that research. And our system of evaluating faculty performance gives faculty incentives to conduct research that will advance the state of knowledge, not simply serve the narrow interests of a corporate sponsor.

Furthermore, the danger that scarce faculty and student researcher time will be diverted to projects of interest to a well-heeled sponsor is hardly unique to industrial partners. The same danger applies to any large source of funding. For example, the areas of interest to the Federal funding agencies shift over time, pulling researchers into the areas receiving more funding. These shifts are part of the research environment in which we live. We tend to accept these shifts as reflecting the public interest (although this may not be always the case) especially if they are based on a peer review process that is similar to the one we use to evaluate our own faculty. The primary difference with industrial funding is that decisions regarding which areas to fund are made by private, for-profit companies. We simply caution against a knee-jerk response that industrial funding is inherently more suspect, in terms of the merit of the projects being funded, than other sources of funding. The research agenda associated with a large-scale project triggering Senate review should be evaluated on its own merits, not based on the category of the entity providing funding. University-industry partnerships could also affect the relative allocations of campus resources across fields. The proposals in this report and existing resource allocation mechanisms on the campus (please see, for example, Section VI below for academic personnel issues) should guarantee that Berkeley can pursue these collaborations consonant with our distinctive values, excellence, and mission.

Apart from the general concern about having research at Berkeley follow corporate priorities rather than priorities based on academic merit or the public interest, there are a number of other considerations that come into play in evaluating the attractiveness of industrial funding. Generally, these are considerations that may affect the willingness of researchers to enter into an agreement with a corporate sponsor, but that do not rise to the level that would require Senate review: (1) In some cases industrial partners are only willing to commit to short-term funding, so

funding can be withdrawn with little warning; this is unlikely to be a concern for the large, longer-term collaborations of interest to us here. (2) Researchers may need to assemble support from multiple companies, and this can be time-consuming. (3) Some companies require significant amounts of time and effort by researchers and support personnel to reach an agreement and to maintain relationships. (4) Time and effort may be needed to negotiate the treatment of intellectual property associated with the research project. (5) Researchers may find it difficult to say "no" when the sponsor asks for a favor, such as serving on a technology advisory board or giving a talk; however, these activities can, in some cases, be mutually beneficial and help strengthen the relationship between the company and the campus.

III. Triggers Meriting Special Senate Notification

Here we set out the characteristics of a proposed research agreement between the campus and an extramural sponsor (be it a corporation, a governmental agency, or a foundation) that should prompt the Vice Chancellor for Research to notify the Senate. We propose that the Senate would then use the process described below to determine whether it wishes to review and comment on the proposed agreement. Because we assume that many proposals technically meeting the triggering criteria will not, in fact, require Senate review, we have designed the notification criteria as broader than the criteria to be used by the Senate in determining whether to conduct a review and in reaching conclusions in that review. This process of notification and review is intended to be fairly rare, and it would not be expected that more than a few proposals each year would meet the criteria for notification to the Senate, much less merit Senate review. Because most such proposed research agreements are on a very tight time line, the Senate needs to have in place a fast, responsive process.

We emphasize as a preliminary that any individual investigator project grant, contract, or research gift would be excluded from Senate review, as would proposals consisting of a small number of investigators conjoining project proposals together to approach a sponsor. In addition, any training grant which would provide broad support for graduate fellowships, GSRs, and/or postdoctoral fellowships in a unit would be excluded.

The research agreements falling within the scope of possible review are those that involve creation of a Center or Institute – an entity that would function in ways similar to an Organized Research Unit (ORU). Such an entity normally has a governance structure consisting of advisory/steering/governance committee(s), and a director – structures and roles missing in individual investigator grants or training grants. In many cases the new entity would issue requests for proposals (RFPs) from faculty members and would award grants through competitive peer review processes. We note in passing that formal creation of an ORU already requires consultation with the Academic Senate.

However, this description does not exhaust the types of research subject to Senate review. We can imagine other models, such as a gift or grant to a department that would provide funding for a new subarea of research on a scale that would influence the overall character and research direction of the department, but which might not have a formal governance structure that would itself indicate the need for Senate review. Senate review (perhaps limited to ordinary review by BIR) of such a gift or grant would also be indicated if it would entail allocation or reallocation of

new FTEs into the subject-area designated by the gift or grant, especially if matching funds by the University are required.

While, as we indicate, the bases for Senate consultation are inherently broad, we here attempt to specify particular triggering criteria, so that the VCR has reasonably clear guidance when to notify the Senate concerning a collaboration proposal. The presence of any one of the following six characteristics should lead to notification. However, we emphasize that these are meant more as indicators than bright line rules. While the presence of just one of the characteristics below may be sufficient to merit notification, in general it will take the presence of many of the factors to lead to a review. In practice, we believe it will be clear to both the VCR and the Senate whether Senate review is appropriate, keeping in mind the profound institutional commitments of both to academic freedom and innovation.

The broad properties for notification or review are as follows:

Scope and level of funding: Senate notification and possible review will be appropriate when:

- The agreement envisages a scope and level of funding that could significantly influence the research agenda of an entire department or of a general interdisciplinary area.
- For centers covering a broad range of disciplines, which in general enjoy a substantial amount of extramural research funding, when dollar expenditures per year, including indirect costs, but excluding amounts subcontracted out to other institutions, exceed 1% of all annual extramural campus research funding. Currently, 1% is a little over $5 million per annum. We give this minimum dollar amount as a percentage of total annual campus research support funding so that there is no need to constantly adjust them in the future.

Note that if the center is located within a single department or is in a department or interdisciplinary area in which extramural funding is less significant, then lower levels of annual funding, perhaps as little as $1/5^{th}$ or $1/10^{th}$ the amount above, could trigger Senate notification and potential review. (In small departments, the triggering fraction would be correspondingly larger.) In short, the level of funding that would trigger notification and Senate review is context-dependent, in relation to the structural effects of such a grant on the portfolio of research in a department.

Governance and partnership: In typical individual grants or contracts, funds flow from the sponsor to the campus investigator; in return, annual or periodic reports and/or a final report on research results are expected, as well as other deliverables. Such grants, to individuals or groups of investigators, do not warrant review. By contrast, Senate notification and potential review are appropriate if the sponsor and campus conceive the proposed center as a partnership, which involves the campus and the sponsor in an enduring joint, institutional identity, in addition to reports and deliverables. If, moreover, the sponsor wishes to participate in governance of the center through membership on its

steering or governing committees, the need for Senate review becomes even more compelling.

Institutional resource commitment: Senate notification and possible review are warranted if the proposed center requires major allocation or reallocation of space or construction of new space, or if significant campus matching funds or cost-sharing are involved. If there is a commitment to the sponsor that employees of the sponsor may occupy university space on a rental basis (proprietary space), Senate notification is required and Senate review is more likely.

Commitments of FTE: If there is a commitment to the sponsor of the proposed research agreement, gift, or partnership to allocate additional campus faculty FTE for new faculty hires in the area of the partnership, notification is required and Senate review is probably appropriate. Consultation with the Senate Committee on Budget and Interdepartmental Relations (BIR) is absolutely required.

Intellectual property and academic freedom: If there are very unusual terms – differing substantially from the range of normal terms requested and approved by sponsors in regard to intellectual property – or if there are any terms that would potentially restrict the academic freedom of campus participants, notification and Senate review are required. For example, proposals regarding blanket rights to intellectual property within a department, inclusion of background intellectual property by non-participants, or unusual forms of prepublication review, would all merit notification and potential review.

Ethical considerations: Senate notification, and possible review, are appropriate when there is a significant risk that the sponsor is currently engaging or will engage in serious and systematic behavior of the following types: criminal conduct, human rights violations (including illegal discrimination), or large-scale environmental despoliation, *and when* there is a high level of institutional commitment by Berkeley, for example creation of a new research entity. This criterion does not apply to gifts or grants received by Berkeley researchers without such institutional commitment. (This point is discussed more fully in section IV, below.)

We add that if there is a planned mutual commitment between the campus and sponsor meeting some of the criteria above, and in which the planned duration is relatively extended – say five years in some cases, and certainly ten years or more – the need for Senate review is heightened.

We also understand that the VCR or Chancellor can bring any proposed research agreement to the Senate for review and comment if there is concern about any aspect of it, even if none of the triggers for notification and review as outlined above are met.

Process for Notification and Review

Once notification is triggered, the VCR should contact the Division Chair, with time permitting for meaningful consultation and advice. We seek to avoid presentation to the Senate of a *fait accompli*. In turn, the Division Chair will consult speedily with the chairs of COR, CAPRA, and ACFR, to determine if a Senate review is needed. If the decision is to initiate a review, this group of three committee chairs will undertake it, with possible augmentation by up to two additional members as determined by the Division Chair. Additional members might be other Senate committee chairs (e.g. the Chair of BIR if there are issues of faculty appointments, or the chair of the Graduate Council if there are issues concerning graduate education) or other faculty members with relevant expertise.

This group should be kept small so that it can respond nimbly, as the time frame for preparation and submission in many (most) of these partnerships is quite compressed. This small working group should keep their respective committees, the Division Chair, and DIVCO, briefed to the extent possible. This working group should have an advisory role in negotiations with the sponsor as to terms and conditions of the agreement. We recognize that confidentiality constraints may limit the extent to which the working group can apprise the Senate and DIVCO of negotiations, and the Senate leadership should be willing to agree that the three to five members of the working group will need to advise the VCR in confidence during the negotiations. However, upon completion of the negotiations and finalization of the contract or agreement (or earlier if there is other public disclosure of the agreement), the group should be relieved of their pledge of confidentiality and then make an open report to DIVCO.

We note, finally, that the envisioned process for review is *not* a vehicle for a collegial veto of sponsored projects. Decisions whether to go forward with a collaboration are ultimately the decision of the Berkeley Chancellor. The Senate's consultative duties, rather, entail both advice to the Chancellor, and constructive work rendering proposed collaborations consistent with our principles and practices. We emphasize that this model of consultation appeared to work extremely well in the EBI negotiations.

IV. Ethical Considerations

The relevance of ethical considerations is a product of two roughly opposing principles. On the one hand, UCB sponsors a culture of broad academic freedom for researchers, and has consistently insisted upon the principle that researchers are free to accept funding from any source, consistent with the law. Most recently this point has been reaffirmed in relation to tobacco-based funding, where the University of California as a whole has rejected attempts to limit researcher access to specific funding sources.

On the other hand, the collaborations at issue here are not individual research projects (or projects by small groups of individual researchers), but the creation of lasting Berkeley entities with multiple participants and a University identity. Both the institution as a whole, and members of the community, have a heightened stake in questions of university participation in the possible ethical or legal wrongdoing of industrial or governmental partners. Precisely

because such collaborations affect the shared institutional framework of all members of the community, serious ethical concerns deserve a role in discussion. By contrast, where merely individual research grants are at issue, concerns about a shared institutional identity are properly subordinated to the autonomy of the researcher.

In substantive terms, and this goes without saying, the University should avoid any collaboration that would render it an active participant in criminal conduct, human rights violations, or environmental despoliation. The University must also not participate in a collaboration that would require it to discriminate in violation of its policies, for example in recruitment of its staff, faculty, or students, even if such discrimination is demanded by the laws of a sponsor.

Beyond these points, where there is good reason to believe that the partner on its own is engaging or will in the future engage in criminal or illegally discriminatory conduct, we believe that this matter should be subject to serious consideration, with an eye to adding forms of monitoring and the possibility of severing the collaboration should such conduct occur (as was incorporated into the EBI agreement, for example).

We emphasize that such scrutiny is not expected to be fatal: we expect that most proposals will be strengthened, rather than, barred, by application of these considerations. For example, the collaboration with Saudi Arabia's King Abdullah University of Science and Technology (KAUST) project calls for Berkeley (among other things) to design a curriculum and recommend recruitment of faculty into a national environment characterized by discrimination on the basis of sex, religion, national origin, and sexual orientation. Nonetheless, the Task Force recommended approval of the collaboration, on the basis of assurances that the KAUST campus environment itself would be nondiscriminatory, separated administratively from other parts of the country, that all Berkeley personnel were eligible to benefit from the collaboration (including any sole Israeli passport holders, who could not by law travel to Saudi), that the University would vigorously monitor KAUST's compliance with these commitments, and that some funds were provided to give further incentives for diversity in engineering at Berkeley. We hope the resulting collaboration reflects both an important educational and ethical accomplishment by Berkeley.

We add two further notes on this point. First, the ethical risks to be considered are present and future-based. Many potential collaborators have ethical or legal problems in their history. If a potential collaborator has reformed its practices, and invites participation into a project that itself presents no ethical or legal conflict, then there is no ethical basis for the University to refrain from establishing a partnership with that collaborator.

Second, the criterion of criminality must be applied judiciously. Many potential collaborators, both industrial and governmental, have large and complex operations. The reach of regulatory criminal law is increasingly broad, and often applied without regard to serious fault or wrongdoing. The mere fact of a potential or actual criminal conviction by a sponsor is not sufficient to cast a collaboration into doubt, without more specific indications of its bearing on the collaboration, or the principles of the University.

V. Governance

It is evident that no single model of governance, both within the operations of the entity and in relation to campus, will be appropriate for all large-scale collaborations. The degree of engagement and oversight by the sponsor will vary, as will the tasks of the collaborative entity. What we offer, instead, are some general principles that can serve as baselines, or minima, for structuring governance. Our goals in offering the following principles are to ensure flexibility and adaptability on the part of the entity, transparency and accountability to the campus and the sponsor, and reflection of the public mission values of the University.

The following principles presume a model structure consisting of an Executive Board, composed predominantly of University faculty with expertise in the project's subject area, although not necessarily participating in the collaboration's research activities; and a Governing Board, drawn from both the University and the sponsor. On this model, the Executive Board makes individual research-grant and operational decisions for the entity, subject to overall review and approval by the Governing Board. Of course, other governance models are possible, and may be more appropriate for some collaborations.

Principles of Internal Governance

- At the operational (item) level of decision-making, there should be a preponderance of University personnel. The Director of the collaborative entity should be a member of the Academic Senate.

- Voting members of the Executive Board should not report directly to the Executive Director, and should have grounds for regarding themselves as independent from the Director's direct influence. We recognize that, in practice, this is unlikely to be an issue: most research participants maintain a diverse portfolio of funded projects, and will have strongly independent views regarding the research area.

- If there is a Governing Board providing oversight for the partnership, equal representation by the sponsor's employees on that Board will be acceptable provided that (a) line-item decisions are reserved for the Executive Board; and (b) the Governing Board members from the University, taken as a group, and from the Sponsor, taken as a group, can each veto proposed actions before the Board.

Principles of External (in Relation to the University) Governance

- The Director of the collaborative entity should be available to report annually, in person, at the Divisional Council's discretion, on the operations of the new entity, with an eye to alerting the Senate to looming future issues. An annual report on research funding and expenditures should also be made publicly available.

- Sponsor employees cannot have any role in personnel decisions concerning faculty participants in the collaboration.

- The entity should be subject to a five-year ORU-type review process, including a review by Berkeley personnel external to the entity.

VI. Academic Personnel

As in the recent cases of the creation of the Energy Biosciences Institute or the KAUST collaboration, some collaborative partnerships between UC and private industry and/or governmental institutions may entail the endowment or support (full or partial, temporary or permanent) of new faculty FTE. Any proposed partnership or collaboration that entails the creation or reallocation of FTE in designated subject areas should require review by the Senate and full consultation with the Senate Committee on Budget and Interdepartmental Relations (BIR).

The following general principles will guide such review:

- Normal departmental search procedures (including restriction of search committee membership to members of the Academic Senate) must apply in all cases. The same established search procedures will apply, regardless of whether the proposed positions will be fully or partially funded by non-state revenues, as is currently the practice for non-state funded FTE in campus units such as the Law School or Haas School of Business.

- As with all FTE allocations, search procedures and appointments must be conducted through regular campus planning and academic review, meeting all Equal Employment Opportunity Commission regulations and the rules and regulations outlined in the *Academic Personnel Manual*. Campus non-discrimination policies, to the extent that they exceed the standard established by the *Academic Personnel Manual*, also apply.

- All FTE allocations must be consonant with the general principle of "the best interest of campus" and with long-range academic planning at the departmental, divisional, and campus level. Faculty positions initiated through, or reallocated to collaborations with either private industry or governmental agencies must be handled through the normal campus review and appointment procedures for on-cycle or off-cycle FTE authorizations.

- Requests for FTE authorization must be initiated and approved at the departmental level before undergoing higher levels of campus review. The research areas for these FTE must fit into the long range plans of the departments that propose to assume responsibility for seeking to fill them.

- Non-19900 funding of permanent FTE, whether for a fixed period of time or permanently endowed, and whether partially or fully funded by non-state sources, must be guaranteed for the full term of the initial agreement, regardless of whether the collaboration between UC and the non-UC partner is terminated prior to the initially contracted term of the partnership or collaboration. Funding for any

faculty position filled in association with a collaborator should be guaranteed, regardless of whether faculty members hired through the new search subsequently terminate their relationship with the collaborative entity.

VII. Grant-Making Processes

In some collaborations, the new entity may provide subsequent grants to proposals by Berkeley researchers. Without trying to establish undue constraints, and within reason, the processes for such grant-making should be transparent, with the criteria codified and made public. Within the parameters of the new entity, relevant Berkeley faculty should be able to compete for these sub-grants. In general, proposals should be peer-reviewed, and the committee (if relevant) deciding which proposals are funded should be composed in large majority by academics. As a matter of objective evaluation, members of that committee should not be involved in the decision-making regarding their own proposals. Proposals submitted and funded should also obviously respect the University's conflict of interest policies. Ideally, at least some participants in the peer review process should not be participants in the collaboration itself, but should be able to provide disinterested review.

If the partner has prior contracts restricting some lines of research within the general scope of the collaboration from being funded (for instance because of confidential agreements not to compete along specified research paths) and so must decline an otherwise meritorious request, the grant-making committee should inform the researcher of the basis for the decision not to fund the project, and should try to find alternative funding for the proposal. Moreover, if the prospect of such restrictions in funding can be foreseen at the time of the proposal for collaboration, the University should try to minimize the scope or effect of restrictions, for instance by encouraging the sponsor to attempt to renegotiate the restrictive agreements, or by finding alternative mechanisms to fund such proposals.

VIII. Financial Returns to Campus

These collaborations may lead to direct financial returns to the campus – returns that can provide greater resources for the basic research and teaching missions of the university. Because future large-scale collaborations will be highly idiosyncratic, we cannot provide an accurate estimate of the likely yields along these various dimensions. Nonetheless, we offer projections based on the EBI collaboration as an illustration.

The flow of money from indirect cost recovery from the partnership: Large-scale collaborations require a great deal of administrative and infrastructural support from the university. Therefore, these collaborations should be subject to at least the same overhead rate as with ordinary research grants (for government grants, 53%). In addition, in some cases the university should consider asking for a higher overhead rate in order to be able to provide a broad direct benefit to all the units on campus.

- In EBI, the VCR's office estimates annual indirect cost recovery to Berkeley of $4.7-6.5M, or roughly 25% of the overall campus annual funding of roughly $24M.

Salary savings from released time of faculty supported on the partnership: If the university-industry partnership supports part of the salary of faculty members, the part supported would be additional savings to the campus. Such support would be subject to the points in Section VI. EBI provided 50% funding for six FTE, and 100% funding for one FTE (the Director). This represents a savings to campus of at least $600K annually.

Savings in start-up costs: If the University-industry partnership supports the start-up costs of new faculty or researchers on campus, that support would constitute additional savings to the campus. EBI provided start-up funds of $7M in direct costs, and $3.5M in lab renovations – crucial for recruiting new faculty to campus.

New research space: If the partnership supports building or renovating new research space in the campus, the added space will be an additional return to the campus after the partnership is over. In addition, if the new space allows existing faculty to move lab space there, the freed space would be available for other uses by the campus. EBI will fund a portion of the new HELIOS facility, resulting in an additional 50K assignable square footage for campus.

Other monetary benefits for the University: Other potential returns to the university are returns from licensing any generated intellectual property (subject to the concerns discussed in Section IX) and space rental on campus by the partnership if that occurs, at rates that represent the actual opportunity cost to the campus, and expected to be clearly above local market rates (and subject to the concerns discussed in Section X).

Finally, we note that the Chancellor's Office should consider assigning some of this financial return to allocations that would directly benefit the entire campus, such as the temporary academic staff (TAS) budget or the Committee on Research allocation.

IX. Intellectual Property

General Observations

Before addressing the issue of guidelines for licensing and management of intellectual property (IP) in large-scale University-industry partnerships which have triggered Academic Senate review, some general comments on IP are in order.

From past experience, it has become clear that that there is no general template for IP provisions that will work for every industrial research contract or partnership. The provisions of each contract must be tailored to the particular circumstances, including factors such as the general field of research covered, the expectations and needs concerning intellectual property in this field, as well as many other factors. For instance, in biotechnology or pharmaceuticals, exclusive royalty-bearing licenses are not uncommon, whereas in information technology, it is common to employ non-exclusive royalty free (NERF) licenses or simply to publish research results, thus placing them in the public domain. Licensing contracts in these or other disciplines may range between these poles. Moreover, in cases where research results leading to IP may

have multiple sponsors, the management of IP becomes even more complex, and flexibility is required to deal with such situations.

Berkeley's overall goals in managing IP are to maximize the impact and accessibility of campus research and more broadly to serve the public interest by facilitating the delivery to the market of goods and services of public benefit that are based on campus discoveries. A related goal has been to help build relationships with industrial partners, and to enhance the flow of funds to support research. In addition, the campus has implemented a program of socially-responsible licensing whereby university research results are made available to the developing world on affordable terms. Metrics based on these broader social goals should be used to judge the success of the technology transfer enterprise rather than metrics based more narrowly on number of patents issued and/or the dollar return to the campus from licensing.

Unfortunately, the intellectual property policies of the University of California are out-of-date. They are based on a conception of technology transfer that is not supportive of the broader goals of public benefit described above. They are overly rigid, with administration of these policies, including exceptions to policy, centralized in the Office of the President (UCOP). As a result, in seeking to achieve campus goals and to build partnerships that are effective in achieving these goals and meeting the needs of our faculty, the Berkeley campus has been forced to request large numbers of exceptions, with resulting delays and immense frustration to our faculty. The University's IP policies should be revised and updated to reflect current needs, and authority to make exceptions as needed should be delegated to the campuses. We very much hope that the current restructuring of the UCOP, with the goal of getting that office out of the transactions business, will result in such changes.

We are encouraged to see that the University of California is a signatory of the document entitled "In the Public Interest: Nine Points to Consider in Licensing University Technology," which was issued on March 6, 2007.[2] We endorse this document, which comports with many of our own conclusions. We urge that its principles be followed in negotiating IP provisions of the large-scale partnerships considered here.

Specific Recommendations

Building on these general observations, we turn now to a discussion of appropriate guidelines for IP management and contractual provisions in partnerships triggering Senate review. While we focus on University-industry partnerships, we note in passing that these principles might usefully be applied to any large-scale partnerships into which the Berkeley campus enters, including those with nonprofit and government entities. Such organizations have their own interests, requirements, and approaches to IP, and we do not presume that large-scale partnerships with industry are inherently more problematic than large-scale partnerships with other entities.

> *Dissemination of research findings:* The public interest in the dissemination of knowledge and technology produced in a public university, which is inherent in the

[2] See http://autm.net/aboutTT/Points_to_Consider.pdf .

University's public mission, should be recognized as a high priority. Berkeley's efforts to support socially-responsible technology transfer should be strongly supported.

Flexibility of contracting: The University's mission of conducting and disseminating research requires that a broad spectrum of IP management strategies be available to the Berkeley campus, ranging from fixed royalty and bonanza based exclusive licensing, to non-exclusive licensing, to open source possibilities.

Decentralization to campuses: Unless and until the University of California adopts more flexible overall intellectual property policies, far more authority to grant exceptions that depart from these policies should be given to individual campuses.

Use experience with smaller projects: Given the current divergence between official UC policy and actual practice, and given the need for flexibility to meet the IP and technology transfer goals of the campus, the IP contractual terms and IP management strategies implemented in large-scale university-industry partnerships should generally be in the range of existing practice for other university-industry contracts into which Berkeley enters. Put differently, the contracts used in large-scale partnerships should not in general be significant outliers in terms of their IP provisions.

Protecting the rights of researchers: Large-scale agreements with industry should protect the IP rights of faculty, students, postdoctoral scholars, and other academic researchers.

In addition to these general provisions, we have a few more detailed recommendations.

Limit the use of exclusive licenses: The use of exclusive licenses should be as limited as possible, given our public mission. To attract industrial funding, Berkeley may in some cases accede to an industrial partner's demand that it be provided with the first right to negotiate an exclusive royalty-bearing license for IP resulting from research that it has fully funded. However, it should be recognized that there is a tension between granting an exclusive license and our overall mission to promote the dissemination of research results achieved at Berkeley. Unless Berkeley is under an obligation to offer an exclusive license to an industry partner, exclusive licenses should only be used when they are truly necessary to ensure that the results of campus research come to the market for public benefit. This state of affairs is only likely to arise if substantial additional investments are needed to realize the public benefits and if the party making those investments would not otherwise be able to appropriate enough of the resulting benefits to warrant making the necessary investments. Non-exclusive licenses are generally the preferred option, either on Reasonable and Non-Discriminatory (RAND) terms, or as NERF licenses. We urge that the University of California update and modernize its current policies so that NERF licenses no longer require exceptions to policy.

First right to negotiate and blanket provisions: A contract with an industrial sponsor might provide the sponsor with a first right to negotiate for an exclusive license or a NERF license to IP growing out of research that it fully funds. However, we regard as unacceptable an IP provision in a contract that gave an industrial sponsor the first right to

negotiate for a license to some fraction of a unit's IP based on their general level of support for that unit.

The Novartis contract contained a provision that granted to Novartis the first right to negotiate for licenses for a certain fraction of all the IP generated in the relevant unit, whether or not the research was supported by Novartis. We do not think that it was a wise decision by the campus to approve a blanket provision of this breadth and scope, although we recognize that, in the event, there were no adverse consequences. Much more narrowly and carefully tailored blanket provisions granting access to IP not supported by the sponsor in future University-industry contracts might be acceptable provided that rights of researchers are protected and that no IP is offered up as part of such an agreement without the approval of all of the (co)inventors. In addition, the provisions should not impede the dissemination of research not funded by the sponsor, and there should be a strong presumption that such licenses are non-exclusive.

As a general matter, it is in the University's interest and the interest of future sponsors to find an equitable way of recognizing the competing interests regarding which IP is covered by such blanket agreements. While a carte blanche pre-agreement to a percentage of IP proportional to support is not desirable, creative solutions to this tension should be encouraged.

Background IP: An industrial sponsor has a legitimate interest in having access to already-developed IP forming the background of the research or methods to be used in the collaboration. Those already-existing IP rights, known as Background IP, might otherwise block the development of the IP based on research they have sponsored and to which they have access under the terms of their contract. We regard as entirely reasonable a sponsor's request that Berkeley incorporate contractual terms in an initial contract guaranteeing access to Background IP on RAND terms. (This is another area where UC policy needs to be updated.) However, we caution that the extent of Background IP to which the provisions apply should be quite limited, e.g., through reference to specific inventors and/or projects. The terms on which the Background IP will be licensed will vary from one situation to another. We would not normally expect Background IP to be available on NERF terms, unless the industrial sponsor supported the research project leading to the Background IP or otherwise compensated Berkeley for access to the Background IP.

X. Academic Freedom

Sponsored research projects at the University, as opposed to work-for-hire or off-site consulting, are, by definition, projects of academic value and so must reflect the principles and interests of the University and its faculty. Protecting the freedom of Berkeley researchers, and the autonomy of the institution, are hence prerequisites of any acceptable collaboration. Academic freedom and both individual and institutional autonomy are protected through two primary principles: freedom of publication and discussion, and informed consent by the researchers as a basis of research participation (and withdrawal from the collaboration without penalty). Any collaboration must guarantee that these two principles are fully protected, and

thus that the collaboration serves the University's fundamental interest in free inquiry and the production and dissemination of knowledge in the public interest.

The Academic Council of the University of California as a whole has expressed its grave concerns about restrictive "strings" imposed by sponsors on University research.[3] The University's Contracts and Grants Manual (CAGM), available at http://www.ucop.edu/raohome/cgmanual/, contains a detailed discussion of acceptable and unacceptable conditions that may be placed by sponsors on research results. The Task Force believes that the current University policies, if followed, are sufficient to protect the academic freedom of researchers and the autonomy of the institution. Recent collaborations have, however, introduced a novel element: closed, proprietary space in campus facilities, rented to the sponsor, in order to bring the sponsor's own employees into greater contact with University researchers while they conduct their own confidential research. While this is not a matter of academic freedom in a strict sense, in that no Berkeley faculty member's freedom is impaired, such arrangements do impinge on academic freedom values, notably the freedom to discuss research and the autonomy and distinctive character of the university's research mission. Hence, we believe this new element calls for further consideration, below.

Freedom of Publication

Publication and dissemination of research results is the lifeblood of the University. Hence current policy on sponsored projects and grants prohibits grants or sponsored projects that "plac[e] an unreasonably long or unlimited delay period on the publication or dissemination of the information resulting from the work under the project" (CAGM 1-400). In practice, this means that any form of prepublication review is strongly disfavored, and that exceptions to this norm will only be made provided the right to review is relatively brief and subject to clear limits on extension. With respect to the EBI, for example, the sponsor, BP, has a right to delay publication limited to 30 days of review if no patentable inventions are involved, and 90 days if patentable inventions are involved (EBI Master Agreement, App. 2, Sec. 6). These are standard terms for industry-sponsored research, and consistent with University policy. The Task Force strongly believes that proposals for large-scale collaborations with more restrictive review or publications limits should be declined if they cannot be renegotiated. Concerns about the effects of restrictive publication clauses are especially significant when, as here, the social and financial impact of the research may be very high.

Informed Consent as a Basis of Participation

Both individual academic freedom and institutional autonomy are protected by ensuring that all decisions by faculty whether and how to participate in the collaboration are made without prejudice, except insofar as a faculty member's decision to withdraw from a sponsored project will perforce mean forsaking the relevant grant funding. In the case of collaboration that, as with the EBI, involves funding new faculty positions, a candidate offered such a position should not be required to participate in the collaboration as a condition of employment. Nor, moreover,

[3] See Academic Council Report, "Problematic Restrictive Clauses in Contracts, Grants, and Gifts for Research," Adopted by the Academic Council July 21, 2004, available at http://www.universityofcalifornia.edu/senate/reports/researchstrings072304.pdf

should withdrawal from the project, even by someone in an FTE funded by the project, result in any impairment to the individual's University status. (Whether the University or the sponsor becomes responsible for funding a new FTE dedicated to the topic of the sponsored project is a matter for negotiation.)

For example, if a sponsored project provided for five years of funding an FTE in nano-engineering, presumably candidates attracted to the position would also be attracted to participation in the sponsored project. But at the time the employment offer is made, through ordinary academic personnel processes, the candidate must be free to accept the offer without condition of participation in the sponsored project. That decision should be made on the basis of full disclosure of the terms and obligations of participating in the collaboration. And should the new faculty member decide, two years into employment, to withdraw from the project, that person's employment status as UCB faculty would be unaffected, though the faculty member would presumably need to solicit new research funds. In either case, how the University responds to an individual's decision not to participate – for example, by a search for a replacement FTE, and how the new FTE, or start-up costs, would be funded – will be a matter between the University and the sponsor. Again, this principle was well-protected by the EBI agreement, and should be retained as a model.

Proprietary Space

While other recent sponsored projects have involved closed, "proprietary" space, where disclosure of work and research results is prohibited, and faculty participation is governed under consulting agreements, such spaces have been heretofore at off-campus sites, albeit close to the University. The EBI agreement is unique, to our knowledge, in establishing such space in a central, on-campus facility: initially 2,600 square feet in the renovated Calvin Lab, and it will later involve comparable space in the new HELIOS facility located above central campus.

The presence of such space generates funds, through market-rate rents, for Berkeley, and, in some cases, the prospect of locating proprietary research space immediately adjacent to the site of the open, academic research on the project can be highly attractive to the sponsor, and a condition for providing substantial research support. We anticipate that this aspect of the collaboration may become more common in the future, as the University seeks additional sources of revenue to maintain its facilities, and as sponsors are drawn by the attractions of an easier flow of intellectual capital. Moreover, as a general matter, and as we emphasize above, the direct interactions between industry and academic researchers are a valuable aspect of such collaborations.

The problem of academic freedom and confidentiality in such proprietary spaces is complex. On the one hand, the intellectual environment of the University is defined in terms of the free exchange of ideas and the dissemination of knowledge. This is the basis of the University's refusal to permit classified or otherwise restricted governmental research in its academic facilities. While many academic labs formally or informally limit access for reasons of security or academic peer competition, securing access for purposes of preserving the sponsor's intellectual property is something of an exception to the University's general commitment to transparency. On the other hand, within technology-oriented academic disciplines, researchers

are used to working with proprietary information, in research collaborations or otherwise, with confidentiality maintained through non-disclosure agreements (NDAs). Without such agreements, researchers simply would not have access to necessary data. Thus, the University must strive to maintain a research environment balanced between openness and the need for confidentiality.

The Task Force is concerned that the provision of *closed* industrial research space on campus to a sponsor may in some cases shift the balance too far, as well as failing to value that space adequately for other university purposes.

First, the presence on campus of such closed space may blur the line between research conducted in the public interest and research conducted for the sake of private profit. Collaborations exist in order to exploit the substantial overlap between these two interests; but the location of an industrial lab within the heart of an academic lab may tend to shift the focus of the collaboration in the direction of the sponsor's more local interests. Relatedly, the existence of such space may degrade the transparency of the university as a whole and the collaboration in particular, perhaps leading to further apprehension within the rest of the University community about the value of such collaborations. It also increases the risk that student researchers may inadvertently create or come to depend on proprietary data that they cannot then fully exploit in publication.

Second, the provision of central campus space, even at local market-rate rents, may substantially understate the value of that space to the University, in terms of the opportunity cost to other campus research activities. Industrial research occurring in that space makes it likely that other academic research must take place elsewhere, perhaps in a more peripheral location. This means, in effect, that the benefits of increased formal and informal collegial interaction provided by a central location are shifted from university researchers to industrial researchers – advantages not captured by rent based on rates for, say, downtown Berkeley or Emeryville.

To be clear, the risks posed by on-campus proprietary space are not only a function of the location itself, but also of the nondisclosure restrictions that accompany the space. Were the proprietary space itself open, although the site of industry-focused work conducted by the sponsor's employees, our concerns would be considerably mitigated, although not entirely removed. (For example, the benefits of intellectual exchange would more clearly spread reciprocally, to the open component participants as well.)

Thus, we recommend that future collaborations be negotiated with an eye to reducing the restrictive effects of closed space.[4] First, the extent of any confidentiality restrictions accompanying the leased space should be minimized. Second, to the extent a leased proprietary space requires confidentiality, we recommend segregating that space to the extent feasible, rather than locating it at the heart of the open research component. Third, as part of the general governance regime, we urge that the collaboration's director be prepared to report regularly about any possible beneficial or adverse effects from the proprietary space. And fourth,

[4] We note that some faculty members have stronger reservations about the permissibility of using campus space for closed, proprietary research, regardless of the rental income.

agreements regarding proprietary space located on central campus (or in other general research facilities) should reflect the actual value of that space, reflecting not simply regional rental rates, but the actual opportunity cost to campus and the special value to the sponsor.

XI. Conflict of Interest (COI) and Conflict of Commitment

Faculty collaborations with industry or government present both rewarding opportunities for intellectual and technological exchange, and possible conflicts of financial interest or other forms of commitment. To acknowledge the possibility of conflict is in no way to gainsay the great value of the collaboration, especially insofar as sponsored research and consultation agreements may enhance the ability of faculty to adjust research in the direction of maximal (and feasible) public benefit.

The possibilities of conflict between faculty members' roles as members of the University, and their possible roles as consultants, entrepreneurs, or stakeholders in the external partners, may be especially acute in the large-scale collaborations at issue here. This is so for a number of reasons. First, large scale collaborations, virtually by definition, will generally concern research in areas of large potential social and financial impact, where collateral financial opportunities for faculty researchers are also very significant. Second, faculty members of the partnership will likely play a distinctive role in the awarding of research grants, through review processes or through direct participation in the governance board. And third, a chief virtue of such collaborations, from sponsoring industries' point of view, is the opportunity to recruit students and faculty into employment with the partner as consultants or as staff, shifting the faculty's efforts from the University's central objectives of research and teaching.

Again, all of these possibilities can be seen as advantages fully consistent with the University's mission, and the roles of faculty researchers, who are entitled, consistent with University policies, to engage in these activities. But they also present risks to be managed. The University has a number of standing policies concerning conflicts of interest and conflicts of commitment. (For an overview of these policies and frequently asked questions, please see http://www.ucop.edu/services/conflictofintans.html#a1.) For example, existing COI policy prohibits a faculty member who owns stock in companies that may directly benefit from the collaboration's research from "*the making of, or the participation in, University decisions in which financial conflicts of interest exist.*" (http://www.ucop.edu/ogc/coi/info.html). Related, Conflict of Commitment policy governs faculty members' ability to engage in compensated consulting work, whether for the sponsor or another entity. This policy is found at http://www.ucop.edu/acadadv/acadpers/apm/apm-025-07-01.pdf .

In our opinion, these policies should be sufficient to govern large-scale collaborations without modification. We also recognize that it would be undesirable to create further administrative obstacles to faculty members' participation in these collaborations. But because of the stakes involved, we believe the University must take responsibility for apprising both faculty participants and sponsors of these policies, and for monitoring and ensuring general compliance. In some situations the University may also discourage consulting opportunities with the industry partner for the faculty members involved. The University might also consider enhancing the transparency of these highly visible projects – for example, posting on the entity's

website the applicable COI policies and their application to participants' financial interests. Proactive transparency would do much to offset the "gotcha" effect of journalists' investigations into these collaborations, where participants' private interests, even if consistent with our policies and the relevant state and federal laws, are nonetheless treated as a scandal.

Nevertheless, we reaffirm that the engagement of our faculty with industry and other private entities is within the mission of the University, and can enhance the ability of the faculty to bring real-world relevance to bear on their University activities. We believe the conflict of interest and commitment procedures that are already in place, if vigilantly monitored, can provide an adequate combination of flexibility and safeguards to protect the integrity of the Institution.

XII. Parameters that Would Exclude Serious Administrative or Senate Review

In addition to the consideration of projects whose scope and substance might trigger Academic Senate review, we have turned some attention to the reciprocal problem: small-scale collaborations that are hindered or even blocked by the current administrative (VCR and UCOP) review steps. While it is impossible to obtain data on projects that failed to materialize due to actual or anticipated delays in review, our committee has sufficient anecdotal experience with such examples as to be convinced of the need to address this much more common end of the collaboration spectrum.

By way of background, there are opportunities for valuable collaborations between industry sponsors and UC faculty, despite the low probability of a direct financial return to the sponsor. Nonetheless, in many cases, VCR and UCOP review hinges on the question whether possible IP yields are well-governed by the sponsorship agreement. For example, academic labs frequently try to discover chemicals that have a particular biological activity that the academic lab discovered that could be a starting place for the development of a drug. The Novartis Institute in La Jolla will now offer free screening for academics with drug targets, with the researcher entitled to claim IP protection for the resulting compound. Offering a free screening makes commercial sense, for Novartis has realized that the real value is in the derivatives of that compound with desirable pharmacokinetic properties.

Moreover, in some cases the value to a company of a sponsored project with the University is time-dependent: an agreement that takes six months to get signed would often fall into another fiscal year in which funding allocated to such a project could be diverted. Likewise, the value to an academic lab can also be time-limited in that the personnel needed for the completion of such a project may graduate or otherwise move on. Costs to the University and the sponsor for legal review can easily exceed the rest of the project's cost.

A lengthy University review process inevitably means that many potential collaborations must be foregone. This is counterproductive, because successful completion of such limited collaborations not only results in valuable knowledge, but could eventually lead to larger sponsored projects that might have IP of value to the University. The University must find a way to expedite review for these cases, offering as much blanket approval authority to the VCR's office as is consistent with the University's mission.

We propose, therefore, that when faculty members can assert in advance that the project would have no likely IP, and when the total size of the project is less than some threshold (stipulatively, $100K per year, including direct and indirect costs), that the project not be subject to more than pro forma review by the VCR's office, nor (*a fortiori)* to review by the Senate.

The downside risk of this proposal – underprotected IP – is minimal. Given that there will never be any IP if the faculty member carrying out a research project fails to file a disclosure, the University already puts implicit faith in its faculty to judge whether a discovery has potential IP value. Moreover, practice has shown that only a small fraction of the discoveries that faculty judge to be of IP value are ever licensed. We recognize that the contracts associated with such agreements will likely have the boilerplate legal language inserted by industry counsel, but also that contesting such language in matters of little probability of significance is not in the University's interests. The small risk associated in such cases will likely be more than offset by the benefits of more research funding in the faculty member's laboratory, and by the prospects of more substantial agreements between the sponsor and faculty member that would receive the review worthy of agreements with potential for IP.

XIII. Conclusion

Large-scale collaborations with industry, and with governmental entities or foundations, present a large range of benefits and potential risks to campus, and are likely to become an increasing source of research support in coming decades. The principal risk presented by such collaborations involves displacement of the public-interested research and teaching mission of the University. But this risk, we believe, can be managed through transparent, faculty-led governance; with clear triggers for and criteria guiding Senate review; our standard practices regarding academic personnel decisions; academically rigorous grant-making processes; strict adherence to principles of academic freedom and non-discrimination; and intellectual property models that promote the University's fundamental interest in the public dissemination of knowledge. Given the existing rigorous and extensive practices of Senate involvement in personnel and resource decisions, we are confident that these new sources of research support can be pursued in a way consonant with Berkeley's distinctive values, excellence, and mission. Finally, in some cases, our suggestions require either the devolving of review authority, or increased flexibility, from UCOP to campus, and we urge the Chancellor to pursue this goal quickly, during this period of reorganization.