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July 18, 2014

PRESIDENT JANET NAPOLITANO

Re: Challenges in Supporting Multi-campus Research

Dear Janet:

The Academic Council is deeply concerned that UCOP's once broad commitment to systemwide and multi-campus faculty-led research has eroded significantly and disproportionately. This decline threatens one of UC's unique strengths as a ten-campus system of great research universities – the capacity to engage broad and varied groups of cutting-edge scholars in collaborations that devise and carry out faculty-led scholarship on a scale not possible on any single campus or at any other University, with resulting opportunities for researchers and graduate students that no other institution can offer.

According to data obtained from the Office of Research and Graduate Studies, the overall systemwide research portfolio shrank 19% from \$164M to \$133M between 2008-09 and 2013-14. And although funding for state-mandated research and large projects protected by MOUs remained stable during these years, the funds available for faculty-initiated research programs will have shrunk by two thirds, from \$69M to \$23M in 2014-15. Granted, these were difficult budget years, but in the same period, the UCOP unrestricted funds allocation declined by only 6%.

The Senate requests that UCOP address the structural causes of the decline by developing a strategic commitment to fund systemwide faculty-led research at predictable levels—for example, setting as a floor, 3% of the total UC research budget as reported in the annual UC Accountability Report. This requires, as correlates, affirming a principled Senate-Administration process to establish priorities for systemwide research, and instituting a clear accounting system that enables all interested parties to see how funds are allocated to systemwide research. We believe these steps are necessary to reverse the dramatic decline and to ensure the stability necessary to attract our best researchers to multi-campus efforts. We note that the Executive Vice Chancellors expressed similar concerns earlier this year.

Among the Senate's greatest concerns is that support for Multi-campus Research Programs and Initiatives (MRPI) – a peer-reviewed competition for grants that support multi-campus research – was cut from \$15.9M to \$6.3M between 2008-09 and 2014-15, of which only \$2.8M is available for new projects. Another drastic reduction – from \$25.7M in 2008-09 to \$13.5M in 2014-15 – has

occurred in the Laboratory Management fees available for competitive funding of faculty-led campus-Laboratory research collaboration.

Current UC accounting and budget procedures discourage multi-year funding commitments because they show central research funds as fungible and, hence, easy targets for cuts. *For this reason, the Senate requests that annual financial reports for systemwide research be compiled to ensure transparency and proper engagement of the research community in oversight and planning.* These reports should show multi-year commitments of anticipated future funds.

Ultimately, the systemwide research budget is a fundamental reflection of UC's values. Support for systemwide research initiatives enables collaboration and scholarship that would be very unlikely to develop spontaneously or on a single campus. We need to assure a robust future for research opportunities that cannot be matched by individual campuses, either because they require large facilities or investments or because funds are not available from traditional sources.

This effort should not be confused with technology transfer, which is often a consequence of cutting edge research, but should not guide the direction of research. Fundamentally, technology transfer is the end result of only limited fields of research and scholarship and represents only a small portion of current UC research. *UCOP should sustain the Portfolio Review Group (PRG) process for systemwide/multi-campus research support and codify its membership to ensure that research priorities are grounded in a robust consultation with research faculty from all UC campuses and with relevant systemwide Senate committees.*

Providing protected funds for research will send an important message that the University of California remains committed to being the world's greatest public research university. I have attached two documents that offer more details about this issue, one which summarizes the structural problem and some possible solutions, and the second which provides background on the fund allocations among the PRG-reviewed programs which the Senate views as fundamental to sustaining UC's greatness.

Sincerely,



Bill Jacob

Encl. (2)

Cc: Academic Council
Provost Dorr
Executive Vice President Brostrom
Interim Vice President Tucker
Associate Vice President Obley
Executive Director Winnacker

Multicampus/Systemwide Research Funding Problem Overview

Issue

The University of California's rightful claim to be the greatest public research university in the world rests on the symbiosis between the University as a *system* and the cutting-edge research its faculty conduct on their respective campuses. These two elements reinforce and magnify each other in the unique ability of the UC system to support multi-campus or systemwide research that crosses disciplinary and geographical boundaries to, as stated in Regents Policy 2307, "strengthen interdisciplinary programs of research and teaching conducted by the faculty, as well as to provide graduate and post-doctoral students with added research opportunities, facilities, and assistance [and may also] facilitat[e] public services related to the University's research programs . . ."

Faculty-led multi-campus or systemwide research enables UC researchers to leverage their combined intellect and resources on ten campuses to tackle questions that no single campus or other institution can. The potential opportunity to expand a faculty member's research program to a multi-campus scale is a powerful recruitment device that distinguishes appointment to a UC faculty position from a position at any other university. For graduate students, participation in systemwide or multi-campus research can be a unique career-enhancement. Historically, UCOP has supported several forms of systemwide research without fully resolving the tension between institutionalized support for ongoing research programs that may require investment in infrastructure and the need to free up resources for new undertakings. The most recent rebalancing took place just as overall funding for the University dropped catastrophically.

Note that funding for research conducted under the auspices of the Division of Agriculture and Natural Resources (ANR) is administered separately subject to independent controls and constraints and is not addressed in this memo.

Although legislative and Presidential initiatives have sometimes brought new resources to UC to address new research questions, the heart of the systemwide research endeavor is faculty-led research with the research ideas generated by the faculty themselves. Support for these efforts has fallen disproportionately since 2008-09, exacerbating the impact of partial reallocation of resources among research programs and drastically curtailing support for new faculty-led efforts.

Problem Dimensions

Between 2008-09 and the 2013-14, the total funds for programs reviewed by the Portfolio Review Group (PRG) and administered by UCOP for research – this excludes those under the auspices of ANR but otherwise includes essentially all centrally funded research – dropped by 19% from \$164M to \$133M¹. The Office of Research and Graduate Studies (ORGS), the primary UCOP entity supporting faculty-led systemwide or multi-campus research, saw its share² of the total decline from \$99M to \$60M over that period. This decrease of nearly 40% occurred during a period when the total drop in UCOP's unrestricted funds was approximately 6%. The programs outside ORGS' share include previously legislatively mandated programs that are no longer line-items in the budget but

¹ See supplemental sheet for details.

² Included here is Discovery/PoC, MRPI, Lab Fees, CHRP, MEXUS, UCO, Keck. Data supplied by ORGS. See sheet on PRG reviewed programs for more details.

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which UC is expected to support. In this context, it appears that funds for systemwide research programs³ have been eliminated or significantly reduced to address reductions in State funding.

Annual budget allocations of unrestricted campus assessment funds for faculty research which is awarded through UCOP systemwide peer reviewed competitions, have declined from \$15.8M in 2010-11 to \$6.35M in 2014-15, with only \$3M of the 2014-15 funds available for new awards. At the same time, the allocation from UC's Laboratory Management Fees to support systemwide or multi-campus research collaborations with the national laboratories has declined from \$25M in 2008-09 to \$13M in 2014-15. Reductions in absolute funding are exacerbated by the failure of UC's accounting systems to reflect future-year liens on funds committed to multi-year projects, creating a perception that these funds can be cut without harming ongoing activities. Funds for the four programs that accept new faculty proposals (Discovery/PoC, Lab Fees, MRPI, and UCMexus) were cut by two-thirds (from \$69M to \$23M) over the period 2008-09 to 2014-15.

Structural Issues

The aggregation of several categories of systemwide and multi-campus research funds in UCOP accounting makes it difficult to discern the degree to which faculty-led research is supported. In discussing "expenditures on research," it is important to be clear about which programs are referenced. Although faculty are the lead researchers in all categories – and shape the implementation of initiatives mandated by the legislature and senior leadership, the kind of research that creates genuinely new knowledge arises out of the research programs that faculty develop to answer their own questions. Despite general agreement that the situation is complex, the Senate has found considerable disagreement among different UCOP entities about which figures are being referenced, in what reporting period, and even what constitutes "research" expenditures in the budget. In each of the past three years, the UCOP budget presented to the Regents, systemwide research expenses have been calculated differently and the numbers are not compatible year to year. Therefore none of the recaptured information can be traced by looking at these documents.

Aggregation also makes it particularly difficult to distinguish fund sources over which UCOP has full or partial discretion from funds that come with externally imposed restrictions. Therefore, for the purposes of this document we disaggregate the funding for PRG reviewed programs into four sources. Two sources consist of funds for state-mandated research program that are run through UCOP – state programs that UC administers as a service to the State of California and state-mandated programs that were once budget line items and continue to be mandated although they no longer receive earmarked funding. The research supported by these programs necessarily focuses on pre-determined topics and, in some cases, is directed within a single institute or center. The first source is state funds for which UCOP has no discretion to redirect their use. The second source includes the funds for three longstanding programs that deeply engage UC researchers and are based on large infrastructure investments combined with commitments to external partners that limit UCOP's ability to redirect funds away from them without severe and immediately visible consequences (UCO/Keck, Scripps, and the Cal ISIs). UCOP has partial discretion to manage funding for these programs, and their total support has remained relatively stable over the period 2008-09 through 2014-15.

³ The big cut in the Discovery Grants Program of \$22M covered about half of the State funding cut to the UCOP budget in 2009-10.

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The third fund source is the Lab Fee income that UC receives for its role in managing LLNL and LANL. For the most part, these funds are directed towards the Laboratory Fees Research Program, although OP has used its discretionary authority to redirect these funds. These funds have been declining steadily. The fourth fund source is the OP money in the Academic Affairs budget. UCOP has complete discretion when allocating these resources to UC's faculty-led research enterprise. This encompasses both long-established Multi-campus Research Units (MRUs) and recently funded Multi-campus Research Programs and Initiatives (MRPI) - with inherent tension between ongoing institutional support and funding for new research initiatives. Severe cuts in the total funds available for both kinds of faculty-led research have created a zero-sum environment in which support for new projects automatically comes at the expense of support for ongoing programs, and support for ongoing programs prevents new initiatives from getting off the ground.

These four fund sources just described, and their 2013-14 levels of funding are collected in following table.

2013-14 Systemwide Research Funding Sources (ANR not included)	
Flow through (state mandated)	\$34M
Three Infrastructure-based Projects	\$57M
Lab Fee Income for Collaborative UC-Lab Research	\$15M ⁴
Remaining and Subject to Cuts	\$28M
Total	\$133M

The first structural issue then, is that the systemwide cut of 19% between 2008-09 and 2013-14 may not appear unreasonable given the financial crisis; however the cuts were concentrated in a few programs that provide faculty new arenas for research innovation and collaborative research across campuses and with the national laboratories. The draconian cut by two-thirds to the four programs that accept new faculty proposals is a result of this structural issue. This problem was exacerbated longterm as funds were redirected from long-term institutionalized support to competitive grants programs, migrating funding for programs that were approved by the Regents to a fully fungible category.

A second structural issue concerns the large projects. They are not completely immune to cuts, but because large portions of their budgets are protected, tied to infrastructure, or subject to contractual obligations to external partners, cuts to them affect programming disproportionately. Particularly vulnerable are programs supporting faculty lines with mandatory cost increases in a frozen funding environment.

Responses

As the budget crisis worsened, ORGS undertook a comprehensive review of all the systemwide or multi-campus research programs under its purview by convening a joint Administration-Senate Research Portfolio Review Group (PRG). The PRG was tasked with identifying basic criteria for supporting research on a systemwide basis and with examining each funded program to determine the degree to which it is aligned with those criteria. The process was extensive and thoughtful and produced recommendations for both sustaining and reallocating resource commitments.

⁴ This amount is the income from the management of the National Labs, which is different from the amount contributed to the Laboratory Fees Research Program.

Analysis

The Senate has considered information from ORGS, Provost Office budget sheets, the line items from the state budget, and UCOP budgets presented to the Regents to understand UCOP's financial support for each of the programs reviewed by the PRG. Research in Agriculture and Natural Resources is not considered here because it has a totally separate funding process and important external constituencies that rely on and protect its work.

Of the \$133M in systemwide research from the 2013-14 budget, only \$43M was spent on discretionary programs – those for which the funds are fungible. These projects have sustained virtually all of the cuts. Moreover, \$15M came from the Lab Fees, so those projects supported by the remaining \$28M are most susceptible to future cuts. The following chart illustrates what has happened to four key faculty led programs between 2008-09 and 2014-15:

	2008-09	2013-14	2014-15 (planned)
Discovery-PoC	\$24M	\$2.8M	\$0M
Lab Fee Program	\$25.7M	\$11.3M	\$13.5M
MRPI	\$15.9M	\$13.1M	\$6.3M
UC Mexus	\$3.9M	\$3.3M	\$3.3M
Total:	\$69.5M	\$30.5M	\$23.1M

Proposed Solutions

- 1. UCOP should address the structural causes of the decline by developing a strategic commitment to fund systemwide or multi-campus faculty-led research at predictable levels. The Senate believes that UCOP should aspire to fund systemwide or multi-campus research at a minimum of 3% of UC's overall research expenditures⁵, with no more than a third of that total committed to state-mandated research programs. With the current UC research expenditures at five billion dollars, this means OP would work towards assuring at least \$150M annually beyond the funds received for ANR.*
- 2. UCOP should make an affirmative commitment to sustain an overall multi-year systemwide or multi-campus faculty led research program not vulnerable to targeted cuts (although not immune to across-the-board cuts.) This should be matched with accounting practices that make it clear to all parties the nature of these commitments.*
- 3. UCOP should sustain the Portfolio Review Group (PRG) process for systemwide/multi-campus research support and codify its membership to ensure that research priorities are grounded in a robust consultation with research faculty from all UC campuses and with relevant systemwide Senate committees.*
- 4. UCOP should develop a clear annual financial report on multi-campus/systemwide research support itemizing all fund sources, listing expenditures from each source itemized according to the program receiving funds, and keep track of out-year commitments of future funds.*

⁵ This is to include the overall amount research funds expended in UC, including direct and indirect expenses, such as reported in the annual Accountability Report in Charts 10.2.2 and 10.2.3 combined.

Status of Funding for PRG Reviewed Systemwide Research¹

Portfolio Review Group Programs Budgets

All systemwide research programs reviewed by the Portfolio Review Group (PRG) are listed below and broken into three categories. Collectively, these projects represent the full UCOP coordinated systemwide research program (\$133M) outside of ANR. Group 1 (\$33.7M) includes legislatively mandated projects funded by a direct flow-through of state funds (sometimes called “off the top”). The second group includes large programs that UC may theoretically choose to fund or not fund, although the budgets of three of them (UCO/Keck, Scripps Institution of Oceanography, and the California Institutes for Science and Innovation) are structured to be minimally fungible. To facilitate the tracking of funds, Group 2 is broken into two subgroups: programs that appear on the Provost’s budget sheets and those that do not. Group 3 includes projects that exist on only one campus and who’s funding either passes through UCOP directly to the campus or is expected to devolve to that status.

Group 1: Direct Flow Through Funding Only – Provost’s Budget (2013-14)

<i>CBCRP: California Breast Cancer Research Program</i>	\$11.65M
<i>CHRP: California HIV-AIDS Research Program</i>	\$8.76
<i>CRCC: Cancer Research Coordinating Committee</i>	\$2.23M
<i>ITS: Institute for Transportation Studies</i>	\$78K
<i>TRDRP: Tobacco Related Disease Research Program</i>	\$11.22M

Total Funding in 2013-14 **\$33.7M**

Group 2: ORGS controls funds for this research. Some fund sources may be restricted and must be directed toward these programs, but the majority are unrestricted funds.

Part A: As Itemized on Provost’s Budget (2013-14)

<i>Cal ISIs: California Institutes for Science and Innovation²</i>	\$16.66M
<i>IRLE: Institute for Research on Labor and Employment³</i>	\$2.00M
<i>LFRP: Laboratory Fees Research Program⁴</i>	\$15.28M
<i>NRS: Natural Reserve System</i>	\$1.29M
<i>UC MEXUS and UC Mexico Initiative</i>	\$3.28M
<i>UCO & Keck: UC Observatories and Keck Telescopes⁵</i>	\$17.95M
<i>White Mountain Research Station</i>	\$571K
<i>ROF: Research Opportunity Fund/UCO⁶</i>	\$4.57M

¹ UC also manages a substantial research portfolio in Agriculture and Natural Resources. These funds are managed outside Academic Affairs, are mostly state funded, and have a substantial constituency that protects it. Therefore they are not considered here.

² \$4.8M of Cal ISI funding comes from the state. The remainder is UCOP campus assessment.

³ IRLE Moves to Group 1 in 2014-15.

⁴ Not all of these funds went to the Lab Fee Program (only about \$11M did), some was moved to other projects, but in theory the funds received here are to go to this project.

⁵ Includes 2 lines from Provost’s budget related to UCO and Keck, and ROF-funds, some of which to go to UCO/Keck. The total UCO/Keck support in this line is about \$4M.

Total Itemized for 2013-14 in Provost's Budget \$61.5M

Part B: Not Itemized on Provost's Budget; Amounts supplied by ORGS:

MRPI: Multi-campus Research Programs and Initiatives ⁷	\$13.1M
PoC: Proof of Concept Commercialization GapGrants	\$2.8M
SDSC: San Diego Supercomputer Center (2012-13)	\$2.55M
SIO: Scripps Institution Of Oceanography (2012-13)	\$19.1M

Total Part B: \$37.5M

Group 3: Programs on one campus only, as noted by PRG; anticipated funding to devolve to campus level, if not already. These are 2012-13 amounts.

Part A: Unrestricted Funds

CPAC: California Program on Access to Care	\$950K
CESLAC: Center for Studies in Latino Health and Culture	\$565K
TAX: US Mexico Treaty and Accords to Prevent and Recover Doubly Taxed Social Security and Income Funds	\$200K
MIND Medical Investigation of Neurological Disorders ⁸	\$2.96M

Part B: Restricted Funds

PEER: Pacific Earthquake Engineering Center	\$1.00M
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Total Group 3: \$5.7M

Analysis

The expenditures for Groups 1 and 2 in 2013-14 total \$132.7M. We do not include Group 3 in the discussion because although these programs are PRG reviewed, their funding has devolved or is expected to devolve to the campuses in the coming year, and \$2M of the \$5.7M in this group is now state mandated. Groups 1 and 2 together can be understood as the UC Systemwide Research Budget. In this budget, \$33.7M funds state mandated programs, and while the PRG offered advice about these programs, they are set in stone until the state changes its mind. This leaves \$99M for systemwide research budget that is under some form of UCOP control.

The two longstanding big-ticket items funded by this budget are UCO/Keck and Scripps, which receive \$22M and \$19M respectively. The PRG has advocated that UCOP retain current funding levels for both of these internationally visible programs, and it is hard to imagine significant budgetary changes to them in the near future. In addition, the four Cal ISIs have emerged more recently as a result of significant state support and encouragement. The 2013-14 Cal ISI budget of \$16.7M included \$4.8M in restricted state funds, and on August 18, 2013, President Yudof signed an MOU increasing base support for the Cal ISIs by \$7M over the next two years, bringing the total

⁶ Some ROF Funds on this line also go to UCO to the tune of approximately \$4M

⁷ Has \$6.8M base funding and includes \$6.3M one-time funds

⁸ Receives \$1M in Restricted Category for 2014-15 with line item state funds.

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funding from the state and the UCOP assessment to \$20.16 million⁹. In considering the future of UC systemwide research, the Senate assumes the budgets for these three programs will remain stable or even increase. The state mandated flow-through programs (\$33.7M) and these three projects (\$57.4M) combine for a total \$91.1M annual commitment that is likely to grow slightly and persist into the foreseeable future.

The rest of this discussion focuses on the remaining programs for which there is some budget flexibility. Their collective budget of about \$43M comes from two funding sources: approximately \$15M is lab fee income and the remaining unrestricted funding comes from the UCOP campus assessment.

This analysis is summarized in the following table:

2013-14 Systemwide Research Funding (ANR not included)	
Flow through (state mandated)	\$34M
Three Large Projects	\$57M
Lab Fee Income for Collaborative UC-Lab Research	\$15M
Remaining and Subject to Cuts	\$28M
Overall	\$133M

Impact on Four Programs

Four programs that are important to the Senate account for about 75% of the remaining \$43M: the Discovery PoC (formerly part of the Discovery program), the Laboratory Fees Research Program, MRPI, and UC Mexus. *These four projects have borne most of the cuts to UC systemwide research since 2008.* For the purposes of this discussion we note that the budgets for most of the other programs (Natural Reserve System, Research Opportunity Fund, etc) remained flat and are not major players in the funding evolution. The following chart shows the funding levels for these programs for 2008-09, 2013-14, and the plans for 2014-15:

	2008-09	2013-14	2014-15 (planned)
Discovery-PoC	\$24M	\$2.8M	\$0M
Lab Fee Program	\$25.7M	\$11.3M	\$13.5M
MRPI	\$15.9M	\$13.1M	\$6.3M
UC Mexus	\$3.9M	\$3.3M	\$3.3M
Total:	\$69.5M	\$30.5	\$23.1

To understand this chart, the following needs to be kept in mind.

- The largest reductions from unrestricted state funds were to the Discovery Grants and MRPI programs. Cuts to MRPI in 2013-14 are obscured because a portion of Lab Fee income was used

⁹ President March G. Yudof to University of California Chancellors. August 19, 2013. Office of the President. *Final Allocations for 2013-14*. See Cycle 1 PRG Report for more details.

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to backfill the MRPI budget. Lab Fee income also dropped significantly based on the structure of the contracts.

- The cuts to the Discovery Grant Program absorbed much of the reductions to UCOP and systemwide research during the financial crisis.
- The Lab Fee reduction in 2013-14 was partly a result of a reduction in fees UC received for managing the National Labs, but also because a portion of these funds was used to backfill the MRPI program. The 2014-15 reduction reflects the new expected annual level without any further redirection of Lab Fee funds to MRPI.
- The MRPI cut for 2014-15 will occur because the one-time funds pulled from other sources to sustain MRPI over the past few years will end. The MRPI cuts are also the subject of a letter of concern sent to President Napolitano by UC Davis Provost and Executive Vice Chancellor Ralph Hexter on behalf of all UC campus EVCs.

Conclusions

The \$34M allocated to flow-through projects is not fungible, and until the state changes its priorities or funding mechanisms, UC will continue to spend these funds as directed, as part of our service to the State. The budget situation regarding the three large projects noted above is more complex, because they are high profile programs, some with decades of UC support that is leveraged to obtain substantial external funding. As many faculty lines are supported in these programs, the Office of the President should review them carefully to ensure that the investments are protected and not allowed to slip away because of short term needs. As these projects cannot, nor should not, be rapidly scaled down, the Senate does not expect substantial changes to them in the near future.

The continued cuts to the Discovery-PoC, Laboratory Fees Research Program, MRPI, and UC Mexus planned for the next year are disappointing in view of the stable UCOP budget proposed for that time period. Collectively, the funding for all PRG-reviewed projects has dropped from approximately \$164M in 2008-09 to \$118M in 2014-15, with essentially all cuts absorbed in these four important research programs. For three of these programs (MRPI, Discovery, and UC Mexus), the University has the ability to increase funding directly by reallocating the UCOP budget. For the Laboratory Fees Research Program, the University is encouraged to re-negotiate the laboratory fee contract to increase the amount coming to UC.

We also note that tracking the allocations and cuts to UC systemwide research funding has proven quite difficult. To understand the full picture, one has to track three funding streams and how they interact: (i) Income sorted according to Fund Source, (ii) Allocations to Programs, and (iii) Amounts Spent. Conversations within UCOP are often confused because these streams are not properly tracked, and the inability of the UCOP budget process to account for carry-over funds from one year to the next further obscures what is going on. Moreover, for each of the past three years, the UCOP budget presented to the Regents calculates systemwide research expenses differently, making it difficult to compare numbers over time and impossible to gather information solely from Regents meeting documents. Sorting this out is a difficult process and better system is needed. The Academic Senate respectfully requests that reporting be improved with regard to accountability and reliability in the future.