

UNIVERSITY OF CALIFORNIA

Report of the Portfolio Review Group

2012-2013 University of California Systemwide
Research Portfolio: Cycle 1 Programs Findings
and Recommendations

1/7/2014

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*** Report updated on January 7, 2014 on page 12 to correct and error in the reported total budget for the CalISIs in FY13-14. Revised amount from \$15.36 million to \$20.16 million. Previous version dated 12/9/2013.**

Letter to the Vice President

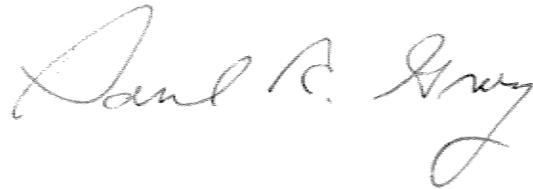
On behalf of the members of the Portfolio Review Group, I am pleased to transmit the final report on Cycle 1 systemwide research programs. This report complements the Interim report submitted by the Portfolio Review Group with recommendations for optimizing UC's systemwide research investments to ensure the highest value and impact for the system.

The findings and recommendations presented in this report represent a strong consensus among the majority of committee members. Two members, while supporting the majority of the findings and recommendations herein, do not support the recommended restoration of funding for MRPI or the planned increase of funding for the Cal ISIs to earlier levels until after the recommended programmatic changes discussed have been adopted and implemented. These member supported transmission of this report with the provision that their caveats on these specific programs be noted.

I want to express my deep appreciation to the members of the PRG who without exception have been exceptionally thoughtful and diligent in their analysis. Their commitment and integrity has been critical to the progress made in conducting this review of UC's systemwide research portfolio. We are greatly indebted to the staff who supported the committee and to the programs directors who provided thoughtful and informative summaries upon which this report is based. This information was critical to our work and their efforts are greatly appreciated.

I welcome your feedback on this report.

Sincerely,

A handwritten signature in cursive script that reads "Paul R. Gray". The signature is written in dark ink and is positioned to the right of the typed name.

Dr. Paul R. Gray

Chair, Portfolio Review Group

2012-2013 Portfolio Review Group Members

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Executive Summary

The Portfolio Review Group was appointed by Vice President for Research and Graduate Studies Steve Beckwith in the fall of 2012 and charged with:

1. Reviewing the Systemwide Research Portfolio (the portfolio) and assessing alignment of programs within the portfolio against the three principles for systemwide research investments;
2. Making recommendations on priorities and adjustments in the current mix of research investments; and,
3. Suggesting long-term strategies for maintaining a vibrant and well-balanced research portfolio.

The alignment assessment was completed for the first group of portfolio programs, referred to herein as the cycle 1 programs, in the spring of 2013 and was conveyed to the Vice President for Research and Graduate Studies in the Interim Report of the PRG.¹ The committee's assessment of priorities and adjustments in research investments was completed for these programs in September and October of 2013. A summary of the alignment findings and recommendations as well as the recommendations associated with the priorities and research investments assessment are the subject of this report. The remaining programs in the systemwide research portfolio will be evaluated by the committee and recommendations conveyed in a separate report. As a basis for the committee's deliberations, the program director for each program being assessed was asked to provide a narrative program summary and supporting data. For both the alignment assessment and the subsequent priorities and research investment discussion, the committee followed a process of individual assessment followed by committee discussion and recommendation development for each program in the systemwide research portfolio. Assessments were based on information provided to the committee by the program directors as well as external program reviews when available. This information was not independently verified.

All of the programs included in the UC systemwide research portfolio make important contributions across the UC system and the committee concluded that each program, or at least a portion of their constituent elements, should be continued. However, in some cases, programs should not be included in the systemwide research portfolio and should be transitioned off of systemwide research funding. The findings of the committee regarding alignment, reported in the Interim Report, and the committee's recommendations on priorities and research investment are summarized in the table below.

¹ University of California, Office of the President. *Interim Report of the Portfolio Review Group: 2012-2013 University of California Systemwide Research Portfolio Alignment Assessment*. Oakland, CA. June 13, 2013. http://ucop.edu/research-graduate-studies/_files/research/documents/prg-2013-interim-report.pdf

Summary of PRG Findings and Recommendations for Cycle 1 Programs

Systemwide Research Program	Findings on Alignment to Systemwide Research Investment Principles	Near term Recommendations and Priority of Systemwide Research Investments (trajectory of systemwide research funds)
MRPI	Aligned	Increase level of systemwide research investment
LFRP	Aligned	Maintain current level of systemwide research investment
CallSIs	Mostly aligned	Maintain current level of systemwide research investment
UCO & Keck	Aligned	Maintain current level of systemwide research investment
NRS	Aligned	Maintain current level of systemwide research investment
MEXUS	Aligned	Maintain current level of systemwide research investment
ROF	Not aligned	Reconfigure program: Maintain current level of systemwide investment
CHRP	Not aligned	Remove program from systemwide research portfolio: Eliminate systemwide research investment
POC	Not aligned	Remove program from systemwide research portfolio: Eliminate systemwide research investment

Background and Process Overview

The University of California, Office of the President provides funding for a small number of research programs and facilities intended to mutually benefit the University and the State of California. The current mix of systemwide research investments arose over many decades in response to different opportunities or political imperatives. While the size and composition of the Systemwide Research Portfolio (the portfolio) had evolved over time, a comprehensive review of the portfolio had not up till now been done.

To ensure that the current and future systemwide research portfolio provides optimal systemwide value, the University of California, Office of the President established the Portfolio Review Group (the committee). The committee was convened by Vice President for Research and Graduate Studies Steve Beckwith in the fall of 2012. Members were nominated to serve on the committee by Campus Chancellors and the University-wide Academic Senate and were selected to include a balance of faculty and administrative perspectives, a broad range of roles and academic disciplines, and a deep knowledge of UC's research enterprise. Initial committee appointments have been extended through June 30, 2014.

The charge to the committee is included in Appendix 1. Briefly, the committee was charged with:

1. Reviewing the Systemwide Research Portfolio and assessing alignment of programs within the portfolio against to three principles for systemwide research investments,
2. Making recommendations on priorities and adjustments in the current mix of research investments.
3. Suggesting long-term strategies for maintaining a vibrant and well-balanced research portfolio.

To manage the workflow of the committee and respond to the charge in a timely manner, the programs comprising the portfolio are being evaluated in two cycles. Programs were analyzed first from the standpoint of alignment with systemwide research investment recommended by the Principles, Process, and Assessment Task Force² and refined by the committee. The Interim Report³ of the committee discussed the findings and recommendations pertinent to the alignment of the cycle 1 programs. The committee subsequently assessed the level of systemwide investment in the cycle 1 programs. This report contains the committee's final findings and recommendations on the alignment and investment priorities for cycle 1 programs.

Principles, Objectives and Considerations

The committee built on the principles for systemwide research investment recommended by the Principles, Process, and Assessment Task Force¹ and further supplemented the principles with working definitions, objectives and considerations (see Appendix 2). The principles, working definitions, objectives and considerations served, collectively, as a framework for the committee's assessment and

² University of California, Office of the President. *The Task Force on University-wide Research Principles, Process and Assessment*. Oakland, CA. June 2012. http://ucop.edu/research-graduate-studies/_files/research/documents/ppa_report.pdf

³ University of California, Office of the President. *Interim Report of the Portfolio Review Group: 2012-2013 University of California Systemwide Research Portfolio Alignment Assessment*. Oakland, CA. June 13, 2013. http://ucop.edu/research-graduate-studies/_files/research/documents/prg-2013-interim-report.pdf

provided guidance and structure to program directors in developing program summaries and supporting information responsive to the committee's needs.

Program Summaries and Supporting Information

For the cycle 1 program assessment, the committee based their findings and recommendations primarily on the program summary and supporting information provided by each program's director. Each director was asked to provide a program summary and supporting data to familiarize the committee with the program's mission, goals and activities as well as how the program's activities (and systemwide funds) directly contribute towards achieving the principles. A formatted template was provided to assist in collecting and presenting information in a uniform and consistent fashion. Directors were given six weeks to prepare their submissions. Submissions were processed by UCOP staff for consistency in formatting and presentation and provided to the committee several weeks in advance of the April 2013 meeting.

While specific data and information was requested, directors were given a wide scope in suggesting additional considerations, metrics or indicators relevant to their programs. This allowed each director to introduce their program using appropriate language and data appropriate and allowed members to experience the wide range of programs and reporting evidenced included in such a diverse portfolio. In the several cases where external program reviews had been completed recently, those reviews were made available to the committee.

Deliberation Process—Principle Alignment Analysis

The committee met in person three times during the 2012-13 assessment: January, April, and May 2013. Prior to the first committee meeting, program directors were advised to begin preparing a program summary and supporting data to support the assessment.

At its first meeting, the committee adopted the principles as modified, discussed the scope of work, and agreed to a process and work plan for the next six months. The committee met again in April to perform an alignment assessment and begin deliberations on a set of recommendations. Members were given access to program summaries and supporting data several weeks in advance of the meeting and were asked to perform individual assessments of each program's alignment prior to the meeting.

Members participated in all program assessments and discussions (in person or through unattributed written comments), except where a direct conflict was identified (see Appendix 3). After all programs were discussed individually, the committee considered alignment across the entire portfolio. Member assessments were compiled into unattributed group reports and used to inform discussions. Based on these discussions, members grouped the programs by degree of alignment and discussed recommendations for individual programs within each group.

A draft report of the committee's findings and recommendations was compiled and circulated to the committee for comment after the April meeting. The committee met a final time in May to finalize recommendations. The Interim Report on alignment of the cycle 1 programs was delivered on June 13, 2013.

Deliberation Process—Research Investment Priority Assessment

The committee met twice in the fall of 2013—September and October—to consider the level of systemwide investment in the cycle 1 programs.

At its September meeting, the committee adopted a process for considering funding levels of the cycle 1 programs, based on a recommendation from a subcommittee appointed for this purpose. The subcommittee also worked with UCOP staff to develop a uniform format of presentation and materials for all programs to be considered by the committee. The process was discussed, slightly modified, and adopted by the committee. Prior to the October meeting, committee members were asked to review the available program materials, and asked to perform individual assessments of each program's systemwide research investment. Members participated in all program assessments and discussions (in person or through unattributed written comments), except where a direct conflict was identified (see Appendix 3). After all programs were discussed individually, the committee considered systemwide investments across the entire portfolio. Members unable to attend all or part of the meeting were consulted offline by the chair following the meeting.

A draft report of the committee's findings and recommendations was compiled and circulated to the committee for comment after the October meeting. The final report on cycle 1 programs (this document) was delivered in December 2013.

Findings and Recommendations

The following narrative summarizes the committee's main findings and recommendations regarding both programmatic alignment and priorities for systemwide research investments. For the purpose of this discussion, the subprograms of the UC Research Initiative program—Proof of Concept Commercialization Gap Grants, Multicampus Research Programs and Initiatives, and Laboratory Fees Research Program—are treated separately, as the committee's findings and recommendations for each subprogram are different. The four California Institutes for Science and Innovation are addressed together as the findings and recommendations for the Institutes are comparable. Similarly, the University of California Observatories and Keck Telescopes are addressed together as the findings and recommendations for these programs are comparable.

UC Research Initiative: Multicampus Research Programs and Initiatives

The committee reviewed the UC Research Initiative (UCRI): Multicampus Research Programs and Initiatives (MRPI) program as it operated up through Fiscal Year 2012-13, when it was supported by a systemwide investment of approximately fifteen million dollars per year. The program supports competitively awarded research projects that span the full range of academic disciplines across all of the University of California's campuses and medical centers. Since Fiscal Year 2010-11, the MRPI program has sustained a reduction of approximately sixty-three percent in systemwide research funds, reducing the MRPI base budget from approximately fifteen million dollars per year to approximately \$5.5 million per year in Fiscal Year 2013-14. It is important to note that the committee reviewed the MRPI program as a fifteen million dollar per year operating program. The committee's findings and recommendations, therefore, reflect this higher systemwide investment.

The committee found that the MRPI program strongly aligns with the systemwide research principles for investment and currently returns value to the system commensurate with an approximately fifteen million dollars per year systemwide investment. In addition to providing important value to the system

in terms of the supported research, the committee found the MRPI program provides important support to strategically important but traditionally under-supported disciplines. The MRPI program's strategic investment in these areas (e.g. UC's Humanities Research Network) provides distinction and value to the UC system that would be difficult to achieve any other way. Additionally, the program provides a critically needed mechanism for identifying, developing, and providing seed funding to new and innovative ideas and initiatives that require collaborative, multi-campus, and cross-disciplinary research. This program is the only systematic systemwide mechanism for identifying and developing such opportunities. The committee felt that there is potential for the program to enhance its systemwide value by more effectively identifying, developing, and supporting new and innovative systemwide research.

The committee found that the MRPI program is efficiently and effectively managed at the systemwide level and could not be replicated by a single campus.

The committee wishes to comment on two important recent developments regarding the MRPI program:

1. Reduction of funding level to \$5.5M per year. The MRPI program as now constituted is not sustainable at that level, and the committee strongly recommends continuation of the higher funding level. If this is not possible, the program should be completely restructured so as to sustain an irreducible core of systemwide research programs that can be enabled only by this program and which are strategic to the UC system. This less desirable narrowing of focus would significantly weaken the value of the MRPI program to the system, as well as its alignment with the three principles.
2. The delay in the next round of MRPI funding competition jeopardizes valuable systemwide programs dependent on MRPI funding. This gap should be immediately addressed to avoid irreparable loss of important assets in the subset of initiatives and projects where alternative funding sources are unavailable.

Recommendation 1: The program should be restored to the \$15M/year level of systemwide investment for the fiscal year 2013-14 budget cycle.

Recommendation 2: Immediately address the gap in funding caused by the delay in the MRPI proposal cycle.

Recommendation 3: Program leadership should consider several enhancements to the program that could potentially increase its systemwide value:

1. More effectively foster new initiatives by adding proposal cycles so that new ideas are captured more frequently.
2. Conduct an impact assessment to capture and measure outcomes aligned with the three systemwide research investment principles. Outcome measures will need to be tailored to individual disciplines. Perform such impact assessments on a continuing basis going forward.
3. Provide larger, more concentrated grants in areas of strategic priority to the UC system.

Recommendation 4: The program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment in three years.

UC Research Initiative: Laboratory Fees Research Program

Funding for the Laboratory Fees Research Program is derived from the laboratory management fee received from the US Department of Energy for administering the three national laboratories associated with the UC system: Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory. These funds are awarded through the UC Research Initiative (UCRI): Laboratory Fees Research Program (LFRP) to support collaborative research between UC campuses and the national laboratories.

The committee found that the LFRP program aligns with the systemwide research principles for investment and provides a unique value to the system by fostering productive collaborations and providing campus faculty and graduate students with access to the unique research facilities and research environments available at the national laboratories. This program is effectively and efficiently administered at the systemwide level.

The systemwide value of this program could be strengthened by expanding the program's research focus and by broadening awareness of and participation in the program. This could be achieved by developing, jointly with laboratory leadership, a set of strategic research priorities that are mutually beneficial to the laboratories and the University of California prior to future LFRP solicitations.

Recommendation 1: The current practices of reinvesting the laboratory management fee to fund collaborative campus-laboratory research under the LFRP program should continue.

Recommendation 2: The program should develop a set of strategic research priorities that are mutually beneficial to the laboratories and the University of California.

Recommendation 3: The program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment in three years.

California Institutes for Science and Innovation

The four California Institutes for Science and Innovation (CallSIs) support an array of translational and applied interdisciplinary research in engineering and the sciences and have demonstrated exceptional capability in leveraging external investments. Collectively, the CallSIs engage virtually every campus to some extent and a subset of campuses very substantially. The CallSIs substantially align with the systemwide principles and return value to both the UC system and the state.

The committee found that there is unrealized potential to increase the systemwide value and impact of the Institutes by expanding research engagement, collaboration, and participation both between each Institute's host campuses and beyond the host campuses. Some CallSIs have achieved higher degrees of cross-campus interaction and leveraging of external funds than others, and the committee, in concert with the recent external reviews,^{4,5,6,7} supports improvement in these aspects wherever possible. The

⁴ University of California, Office of the President. *California Institute for Quantitative Biosciences, 2007 Academic Review Final Report*. Oakland, CA. November, 2007.

⁵ University of California, Office of the President. *Center for Information Technology Research in the Interest of Society, 2010 Academic Review Final Report*. Oakland, CA. December, 2010.

⁶ University of California, Office of the President. *California Institute for Telecommunications and Information Technology, 2011 Academic Review Final Report*. Oakland, CA. November, 2011.

committee recognizes that the Institutes have individually evolved their own operating and research approaches and that without careful implementation, broadening multicampus collaborations has the potential to lessen the impact and focus of the Institutes. Nonetheless, to varying degrees and depending on the particular Institute, the opportunity to enhance each Institute's systemwide value exists.

Each Institute has recently gone through an academic review. While these earlier reviews focused on individual Institutes, it is an appropriate time to examine the Institutes as a group. The committee recommends that the Office of the President consider forming an advisory body to provide advice to the Institute directors on 1) strategic opportunities for increasing multicampus engagement in the Institutes wherever possible and appropriate; 2) areas of overlapping research interest and projects between Institutes; 3) strategies for more closely aligning cross-Institute research initiatives where appropriate; 4) strategies for evolving the program as the current research domains mature; 5) areas of overlapping administrative functions and strategies for increasing management efficiencies; and 6) operational best practices that can be shared across Institutes among other topics to be decided on by the Institute directors and UCOP.

The 2013-14 fiscal year allocation memo⁸ indicated the CallSI base support will be increased by seven million dollars over two years; bringing the total funding from state and assessment funds to \$20.16 million. The committee found that this increased systemwide investment is appropriate and should remain steady through fiscal year 2016-17, after which the program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment. While some level of systemwide investment in the CallSIs is both necessary and appropriate, it may be possible for host campuses to increase support of the Institutes on their campus. This consideration should be part of subsequent evaluations of the systemwide investment.

Recommendation 1: UCOP funding levels for the Institutes should be maintained at the fiscal year 2013-14 allocation level through fiscal year 2016-17, at which point the program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment.

Recommendation 2: Each Institute should develop a plan for increasing systemwide research engagement, collaboration, and participation wherever possible, advantageous, and appropriate.

Recommendation 3: The Office of the President should consider forming an advisory body with systemwide as well as non-UC affiliated membership to provide advice regarding future evolution of the Institutes as a whole and opportunities for inter-Institute collaboration and synergy.

UC Observatories and Keck Telescopes

The UCO Action Plan⁹ mandates operational and funding bounds on the University of California Observatories (UCO) program moving forward. The committee was not asked to comment on this plan and has not done so in this report. The committee did review the program for its alignment to the three

⁷ University of California, Office of the President. *California Nanosystems Institute, 2011 Academic Review Final Report*. Oakland, CA. November, 2011.

⁸ President March G. Yudof to University of California Chancellors. August 19, 2013. Office of the President. *Final Allocations for 2013-14*.

⁹ Provost and Executive Vice President Aimee Dorr and Executive Vice President Nathan Brostrom to UCO Interim Director Sandra Faber and UCO Interim Executive Director David Kliger. September 16, 2013. Office of the President, *UCO Action Plan*.

systemwide research investment principles and found that overall, the program substantially aligns with the principles. The committee also found that the UCO returns systemwide value commensurate with the current systemwide funding through world class astronomical facilities and important public outreach that supports UC's current and future preeminence in astronomy and astrophysics. Implementation of the UCO Action Plan needs to be done in a managed fashion so that this systemwide value is maintained, and which comprehends the need for UCO to support Keck and the next generation telescopes.

In addition to the activities outlined in the UCO Action Plan, as planning, schedules, and budgets for the next generation telescopes progress the committee recommends that the program consider investment priorities for whether and how UCO could support Keck and a next generation telescope. The committee found that the Keck Telescopes were operated efficiently and found that operation of the Keck Telescopes is a good example of a systemwide activity. UC's current contract to support Keck stipulates the annual level of systemwide investment through 2018. The committee found that the Keck Telescopes deliver value commensurate with this level of systemwide investment.

At this time, the committee is not making a recommendation on the level of systemwide funding as the UCO Action Plan provides a mandated path for the complex organization. However, the committee could not ascertain whether or not the systemwide funds currently supporting the Lick Observatory will be retained in the UCO program as the Lick Observatory is transitioned off systemwide funds. The committee recommends that these systemwide funds remain with the UCO program to appropriately support, plan, and execute Keck and Keck-related activities and projects developing the next generation telescopes. The committee recommends that UCO be reevaluated for both alignment and systemwide investment in three to five years; at the mid-point of the UCO Action Plan timeline. The committee assumes that the program will operate under the guidelines outlined in the UCO Action Plan.

Recommendation 1: The program should include discussion of long-term investment priorities as the end of the current Keck contract approaches.

Recommendation 2: The systemwide funds currently supporting the Lick Observatory should remain with the UCO program to the extent appropriate to support, plan, and execute UCO priorities as the Lick Observatory is transitioned off systemwide funds.

Recommendation 3: The program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment in three to five years, at the mid-point of the UCO Action Plan timeline.

Natural Reserve System

The Natural Reserve System (NRS) provides the UC system with a unique opportunity to conduct field research, educate students, engage the public, and conserve California's biodiversity. The program is an important asset for the UC system, for the state, and for the nation. As such, the committee found that the NRS program is well aligned with the systemwide research principles and returns value commensurate with the current systemwide investment.

Given the present revenue streams, the current size and scope of the program may be unsustainable. A strategic plan is needed to move the program to a sustainable financial model that preserves UC's investment in biodiversity conservation, addresses the deferred maintenance and deterioration issues across the reserves, increases the educational and research opportunities to the UC community, and improves the program's public outreach capabilities. The program should consider cultivating alternative revenue streams and, where appropriate, partner with philanthropic organizations and other

conservation funders to support the reserves. Of critical importance to the program's long-term sustainability is the deferred maintenance and deterioration of facilities at many of the reserves. The committee recommends that the program include in its strategic plan a comprehensive process for prioritizing and working through the backlog of existing maintenance issues. Greater awareness of the program within the UC system could help increase use of the Natural Reserve System by researchers both in the state and around the country, which could enhance the program's overall impact. Broader awareness of the program outside of the UC system could help increase use of the program by community members, educators, and potential funding partners.

The new NRS leadership presents an excellent opportunity for the program to develop and implement a strategic plan and to improve the systemwide engagement and governance structure across the program.

Recommendation 1: Funding should be maintained at the current level through fiscal year 2014-15 while the strategic plan is developed, after which the appropriate level of systemwide support should be reassessed.

Recommendation 2: The program should immediately develop a strategic plan to guide future directions for the system. The plan should address the systemic issues of deferred maintenance across the reserves, and if necessary should include a proposal to restructure the program to a critical core of representative ecosystems so that the NRS, as a whole, is sustainable.

Recommendation 3: The program should increase awareness of the NRS and the educational and research opportunities it provides the UC community.

Recommendation 4: The program should strengthen outreach and fundraising activities to cultivate alternative funding streams.

University of California Institute for Mexico and the United States

The University of California Institute for Mexico and the United States (UC MEXUS) is an important program for the state as an element of the collaborative, cross-border partnership between California and Mexico. Overall, the committee found that the program had potential to align well with the systemwide research investment principles. However, alignment would benefit greatly from a more strategic focus, perhaps around a limited number of themes that could be determined together with CONACYT.

While the current program provides systemwide value, the committee noted additional potential for enhancing the return on systemwide investment. Consideration should be given to whether or how management efficiencies could be achieved by leveraging campus expertise in dealing with international students. Both a program review and a management-efficiency review may help improve returned value.

Recommendation 1: Systemwide investment in the program should be kept flat at the current level and re-evaluated when the CONACYT-UC MOU negotiations are completed.

Recommendation 2: The program should collect and assess the program's impact on faculty and student diversity across the UC system. This should subsequently be done on a regular basis.

Recommendation 3: As part of the CONACYT-UC MOU renegotiation, a set of strategic focus areas should be developed to serve as a starting point for the discussion. Multicampus engagement and participation should be among the UC priorities in the renegotiation. Exploration of potential CONACULTA-UC collaborations should be postponed until after the CONACYT-UC MOU is finalized.

Recommendation 4: The program should be reevaluated for alignment with the systemwide research investment principles and level of systemwide investment in three years.

Research Opportunity Fund

The committee considered it desirable and appropriate that the Vice President for Research and Graduate Studies have access to a small discretionary fund that allows him to respond quickly to opportunities, seed new efforts, and support fast-moving and innovative research that might not allow time for a full proposal cycle. However, the committee does not believe that the Research Opportunity Fund should be assessed as part of the UC systemwide research portfolio. While the opportunities seeded with this fund may very well develop into systemwide research programs that could be included in the systemwide research portfolio and, therefore, would be appropriately assessed by this committee, until that point the VP-RGS should decide how best to manage this fund and how to make decisions about its use. As such, we recommend this program be removed from the systemwide research portfolio and evaluated separately by the Vice President according to its own success criteria.

The committee sees systemwide value in having a mechanism for identifying emerging areas of research and innovation across the UC system that might be best addressed by multicampus efforts. If there continue to be funds that are regularly allocated towards frequent and rapid proposal competitions, the committee recommends that this aspect of the ROF program be folded into the existing Multicampus Research Programs and Initiatives program, which the committee found efficiently manages such awards and competitions. It is essential, however, that the short proposal cycles and response times present in the ROF be retained to capture opportunities as they emerge. As currently implemented, the ROF program is relatively unknown, limiting its potential systemwide value. To capitalize on its potential value, the committee recommends greater outreach to the broadest eligible community of investigators.

Recommendation 1: The program should be removed from the systemwide research portfolio and evaluated separately by the Vice President according to its own success criteria.

Recommendation 2: Consideration should be given to folding aspects of the existing ROF program into the Multicampus Research Programs and Initiatives program.

Recommendation 3: The program should increase outreach to the eligible community of investigators to increase awareness and utilization of the program.

California HIV-AIDS Research Program

This program has been a key part of California's leadership in attacking the AIDS epidemic over the past thirty years. Originally conceived and funded as a state program administered by UC for the state, this program has had a broader focus than other programs in the research portfolio, supporting HIV/AIDS-related research across the state at both UC and non-UC institutions. The program has created several partnerships between UC researchers and external organizations that are working to advance HIV/AIDS treatment and prevention involving community clinical interventions, trials of new approaches to HIV treatment and prevention in the field, policy research and development, and other public health related activities. Funds are also used to support pilot research and training grants available to both UC and non-UC investigators.

The program does provide some resources to support HIV/AIDS research. However, these resources are not unique and are much smaller than available federal resources, thus the committee did not conclude that there is strong alignment with Principle 1 (enhance UC's research capacity). While the program

relies heavily on multi-sector collaborative efforts, these collaborations are primarily between UC faculty on a given campus and external entities instead of systemwide collaborations. The program does demonstrate efficiency in management, aligning adequately with Principle 2 (promote inter-campus collaborations and efficiencies of scale). While this program was unquestionably impactful when it was initially founded, the federal investment in HIV/AIDS research has greatly surpassed California's investment, thus diminishing the current impact of systemwide funds supporting this program. Therefore alignment with Principle 3 (impact for California) was strong but is waning. On the whole, the committee found the program to be important but had concerns about the program's overall alignment with the systemwide investment principles.

The committee recommends that, over a period of years, funds be shifted to help support systemwide research that is tackling new priority research areas of significant impact for the state of California. The reduction of systemwide research funding for the CHRP should be managed so that 1) some existing research-related components of the program can be competitively considered for funding through the MRPI program; 2) important community and clinical-related aspects of the program can identify other funding sources; and 3) existing grants and program commitments can be fulfilled.

Recommendation 1: Over the next two to three years systemwide research investment in the program should be gradually reduced, and that those research funds be shifted to support new research opportunities. Consideration should be given to shifting these systemwide research funds to the MRPI program as this is the existing mechanism for identifying and supporting new systemwide research opportunities.

Recommendation 2: Where appropriate, existing research-related components of the program involving faculty and graduate student research (i.e. the pilot research programs, training grants, and perhaps parts of the policy research programs) should be absorbed by other systemwide programs. The MRPI competitive grant process may be suitable.

Recommendation 3: The program should identify alternative modes of funding for community and clinical-related aspects of the program as these components are unlikely, even with restructuring, to align closely with the systemwide research investment principles.

UC Research Initiatives: Proof of Concept Commercialization Gap Grants

Programs that bridge the gap between discovery and application are critically important for both UC and the state and the committee recommends that investments in such programs continue. However, when evaluating the Proof of Concept Commercialization Gap Grants (PoC) program, the committee found that while the program has potential to align with Principle 3 (impact to the state), it did not align with the other principles.

PoC-type programs are most successful when the faculty and students conducting the research are closely linked to the ecosystem of investors and entrepreneurs unique to each campus. These close relationships are harder to develop and maintain in a systemwide program. Therefore, the committee recommends that campuses play the leading role in efforts to incubate and stimulate business start-ups while the Office of the President provides support and assistance for the campuses; coordinates responses to Regent's, media, federal, and state inquiries; and communicates the aggregated impacts resulting from campus-based programs.

Recommendation 1: Investment in the PoC program should be discontinued as a formal systemwide program and efforts shifted to the campuses as the relationships between industry and faculty are local and unique.

Conclusion and Next Steps: Plan for Future Assessments

The committee found that the value returned to the system by the cycle 1 programs reviewed in this report justifies the continued investment of systemwide funds. The findings and recommendations contained in this report would, if adopted fully, result in a flat to increasing systemwide investment in the research portfolio. The reduction in investment in the California HIV/AIDS Research Program would approximately offset the recommended restoration of systemwide research investment in the University of California Research Initiatives: Multicampus Research Programs and Initiatives.

The remainder of the systemwide research portfolio, those programs in cycle 2 of the PRG review, will be evaluated for alignment with the systemwide research investment principles and level of systemwide investment during the second half of the 2013-14 academic year. This will complete the committee's first two charges. The committee will then discuss long-term strategies for maintaining and evolving a vibrant, well-balanced UC systemwide research portfolio, thus completing the current committee charge.

Appendix 1: Portfolio Review Group (PRG) – Charge to the Committee (01/17/2013)

The UC Office of the President (UCOP) invests¹⁰ in a limited number of systemwide research programs and facilities to serve UC-wide needs and strengthen research capacities throughout the UC system. The overall objective of the Portfolio Review Group (PRG) is to help optimize the investments in this portfolio given constraints on overall funding capacity. The PRG should:

- 1) Provide advice to the Vice President of Research and Graduate Studies (Vice President) on the overall value and unique purpose of the systemwide research portfolio to the University and the State of California.
- 2) Provide recommendations on how to improve UC's return on current investments. This includes recommending changes to the configuration and investment levels in the programs within the portfolio.
- 3) Advise the Vice President about strategies for growing or evolving UC investments in systemwide research to strengthen and/or balance the research portfolio.

The PRG will provide written reports to the Vice President. Final decisions about investments in research will be made by the UC President, in consultation with the UC Provost and Vice President. Recommendations will be made available to the UC community to ensure transparency about systemwide research funding.

The PRG will be responsible for carrying out the following principle tasks:

- 1) Develop working definitions and indicators for the Principles for Systemwide Research Investments (Systemwide Principles) provided by the Vice President (see attached).
- 2) Utilize the Systemwide Principles, and the working definitions and indicators (referenced above), to carry out an evaluation of the systemwide research portfolio based on information provided by Program Directors, program reviews and UCOP analyses. The committee may request additional information, from Program Directors or UCOP staff, as needed. The committee should consider both the overall performance of the portfolio in delivering value based on the Systemwide Principles and the relative value of individual research investments compared to the dollars invested. Based upon this evaluation, the committee will provide recommendations to the Vice President on priorities and adjustments within the current mix of research investments.
- 3) Consider and recommend long-term strategies for maintaining a vibrant and well-balanced research portfolio that is responsive to the needs of the University and State. Based on the Systemwide Principles, the committee should consider different approaches to identifying and evaluating new opportunities and/or areas for growth. The committee may also consider different models for funding or project competition and selection.

Additional tasks:

¹⁰ In FY2012-13, UCOP invested close to \$85 million of UC's funds to support programs within the UC systemwide research portfolio.

- 4) During the course of its deliberations, the committee should develop suggestions for more effective strategic directions and management of individual portfolio programs. These suggestions should be noted and communicated to the Vice President as appropriate.

PRG Membership:

- A. Composition: Members will be appointed by the Vice President from a slate of faculty nominees drawn from across the UC system; administrators from the campuses and UCOP; and individuals not employed by UC (External), as deemed necessary by the Vice President. Committee membership shall be maintained at approximately 50% academic faculty and 50% administrative members.
- B. Nominations: The Vice President will select administrators and external members from nominations from campus chancellors, taking into account representation by a broad range of roles and academic disciplines on and an emphasis on individuals with a deep knowledge of research (e.g. Vice Chancellors for Research). The Vice President will work with the Chair of the Universitywide Academic Senate to solicit nominations for faculty members.

ATTACHMENT A: Addendum to PRG Charge: Deliverables for Founding Committee Cycles

In the initial founding term (Cycle 1) of the PRG, the committee will be charged with completing the following specific tasks and deliverables by June 30, 2013:

- 1) Carry out an evaluation on an initial set of research programs assigned to the systemwide research portfolio and use that experience to refine the working definitions, indicators, and process. Provide a report that summarizes how well the current portfolio provides value to the UC system, based on the Systemwide Principles provided below. The report should assess the alignment or “fit” of each research program individually, and the portfolio, as a whole. The committee may recommend some programs as “well-aligned” with Systemwide Principles, and may note others of questionable fit, based on the information provided. These latter programs may require more investigation. The committee is invited to recommend a process for further investigation of these programs, or specific questions they would like to ask of Program Directors. NOTE: Additional research programs may be included in the systemwide research portfolio as the committee’s work progresses.
- 2) Based on experience gained in the first cycle of evaluations, develop, refine and implement an annual process for evaluation of overall quality and appropriateness of the components of the systemwide research portfolio.

ATTACHMENT B: Principles of Systemwide Research Investments

The Vice President of Research and Graduate Studies charges the PRG with the following Systemwide Principles to help guide its work. These principles were derived from the work of a joint task force of UCOP, Academic Senate and campus administrators (the PPA Task Force) which convened in FY2011-12 to discuss a framework to guide future decision-making and evaluation of research investments.

Each UC campus has a unique and competitive research enterprise that is responsive to its faculty and students, and to its sponsors and stakeholders in research. As a ten-campus public university system, however, UC has unique opportunities and responsibilities to invest in research that is

different and beyond what can be done on a single campus. In addition to the objective of supporting research of the highest quality and impact, the following three principles define the goals and purpose that drive and distinguish UC-wide research investments.

1. Principle #1: Act as one system of multiple campuses to enhance UC's research capacity, influence and advantage. With ten campuses, three national laboratories, state-wide resources and networks, the UC system offers researchers access to opportunities and a competitive advantage that a single campus cannot provide on its own. Acting as a network of multiple campuses, UC can invest in efforts that bring the best and most diverse minds together to define challenges, secure funding, and solve significant problems. This provides more opportunities for UC's world-class faculty and creates larger and stronger collaborative resources and networks that can enhance the entire research community.

2. Principle #2: Promote efficient inter-campus collaborations and systemwide economies of scale.

Finding ways for UC researchers and administrators to cross campus boundaries and work together effectively is a key goal of UC-wide investments. Not only does this generate energy and ideas among UC researchers across the system, but it leads to shared innovation and efficiencies in how we conduct and manage research, resulting in savings or financial gains that can be reinvested in UC-wide research.

3. Principle #3: Serve the State of California.

As California's research university, we implement research on behalf of the state in a fair and impartial basis. UC research has a unique capability to address many of the greatest challenges facing California today. UC seeks to create and grow industries that support California regional economies and to educate a culturally literate, knowledgeable workforce that will continue to lead the growth of California and optimize the State's return on its investment in UC.

Appendix 2: Considerations for Conducting the Principle Alignment Review (Revised 05/24/2013)

Principle #1: Act as one system of multiple campuses to enhance UC's research capacity, influence and advantage.	
Objective	Considerations
1. Provide UC faculty and students with access to unique facilities, resources, and/or opportunities that sustain and extend UC's competitive advantage.	1. What opportunities, resources or facilities provided by the program can uniquely leverage UCOP funds to position UC as a world leader in current and emerging research, scholarship, and/or creative work?
	2. What is the scope of access to these unique systemwide opportunities, resources or facilities for UC faculty, students and researchers? How does it go beyond that which could be achieved through a single campus initiative or activity?
	3. How do the unique systemwide opportunities provided by program help attract and retain faculty, researchers, technical staff and students, significantly enhancing campus recruitment/retention efforts?
2. Enable successful competition for sponsored research projects and grants for which proposals from a single campus would be substantially less competitive.	1. How does the program enable successful competition for sponsored research projects and grants for which proposals from a single campus would be substantially less competitive?
	2. How does the program's approach to research project development and research project collaboration build systemwide engagement, consensus and support that encompasses (and benefits) multiple campuses?
Principle #2: Promote efficient inter-campus collaborations and systemwide economies of scale.	
Objective	Considerations
1. Ensure efficient operation/management of shared research, facilities, systems, and/or staff.	1. How does the program operate/manage systemwide shared research resources, facilities, systems, and/or staff more efficiently than might be managed by a single campus program or initiative?
	2. Is the program's operational efficiency periodically evaluated and how are recommendations for improvement implemented?

<p>2. Demonstrate systemwide engagement and collaboration beyond that present on a single campus.</p>	<p>1. How does the program regularly engage multiple campuses to encourage and identify opportunities for collaborations and broader participation that can extend and leverage UC’s existing research expertise and resources across UC campuses?</p>
	<p>2. How does the program engage additional UC campuses, similar programs, and/or external organizations to promote collaboration, share administrative functions, and avoid duplication of effort to achieve higher efficiencies?</p>
<p>Principle #3: Serve the State and citizens of California.</p>	
<p>Objective</p>	<p>Considerations</p>
<p>1. Collectively impact Californians through research addressing current and emerging issues of strategic importance to the state.</p>	<p>1. How does the program demonstrate UC’s commitment to public outreach and inclusion, citizen engagement, and broader public education?</p>
	<p>2. How does the program deliver significant impacts, either locally or across California, in economic, social, environmental, energy, health, security, and/or other areas to serve the public interest?</p>

Appendix 3: Conflicts of Interest (updated 09/23/2013)

Conflicts of interest exist when a review committee member can be viewed as being in a position to gain or lose personally, professionally, or financially (including for commercial reasons) from a research program under consideration by the Portfolio Review Group (PRG). In order to ensure that the fairness and objectivity of the reviews are not compromised by such conflicts, the guiding principle of University of California is to avoid both actual and perceived conflicts.

PRG members must identify and declare potential conflicts of interest (or their appearance), and may be asked to recuse themselves from the scoring of program summaries for which a potential conflict has been identified. A group member should notify the PRG chair and UCOP staff immediately upon identifying a potential conflict. If a conflict arises at the meeting, the member should notify the Chair, who may then ask the member to abstain from the scoring of that program.

There are two primary categories in which conflict may occur:

PRG Member Personally Engaged with Program or Department Under Consideration by PRG: If the PRG member is named as an affiliated faculty or staff, is engaged in the oversight of the program (e.g. sits on executive boards, has direct reporting line to or from the program), has received funding, or expects to hold some appointment or position with the research program under consideration by the PRG or holds an appointment in a department that would participate in the research program under consideration by PRG, there is a *prima facie* conflict. PRG members would be recused from scoring these programs and would instead be assigned to lead or participate in discussions on research programs from other departments or research units.

PRG Member Has a Relationship with Program: A conflict is considered to exist if the group member has a professional or close personal relationship with the Program Director or other primary member of the research program team. Examples of this category include but are not limited to:

- A PRG member's spouse or registered domestic partner, family member, business partner, is named in the program summary as affiliated faculty or staff, or the member is aware that this person will be invited to join the staff under specific circumstances.
- The PRG member and key program personnel have co-authored a peer-reviewed publication within the last five years.
- At the time of the PRG meeting, the PRG member and key program personnel are actively collaborating, or are planning to collaborate on other research.
- In the recent past, the PRG member and key program personnel had a close professional relationship, e.g., advisor/student, postdoctoral mentor/fellow.

You will be required to sign a form disclosing any potential conflicts of interest you might have in evaluating research programs within the UCOP Research Portfolio.

Thank you for agreeing to serve as a member of the Portfolio Review Group for the University of California. Please contact Debbie Shen, PRG Project Lead, if you have any questions (Debbie.Shen@ucop.edu).