

UNIVERSITY OF CALIFORNIA, ACADEMIC SENATE

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*Chair of the Assembly and the Academic Council
Faculty Representative to the Board of Regents
University of California
1111 Franklin Street, 12th Floor
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February 6, 2014

**AIMÉE DORR, PROVOST
STEVEN BECKWITH, VICE PRESIDENT,
RESEARCH & GRADUATE STUDIES
UNIVERSITY OF CALIFORNIA**

Re: CalIT2 Review

Dear Aimée and Steve:

The Academic Council discussed the external review of CalIT2 in the spring of 2011. Because some divisions were not consulted by their administrations and also wanted an opportunity to comment on UCORP's assessment, we extended the comment period to the fall. Council received a letter from the San Diego division and asked me to forward it to you, along with UCORP's comments, for the record.

Please do not hesitate to contact me with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Bill Jacob".

Bill Jacob, Chair
Academic Council

Cc: Academic Council
Martha Winnacker, Senate Executive Director



UNIVERSITY COMMITTEE ON RESEARCH POLICY (UCORP)
Michael Kleeman, Chair
mjkleeman@ucdavis.edu

Assembly of the Academic Senate
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May 16, 2013

**ROBERT POWELL, CHAIR
ACADEMIC COUNCIL**

RE: Academic Review of the California Institute for Telecommunications and Information Technology (CalIT2), a California Institute for Science and Innovation (Cal ISI)

Dear Bob,

The University Committee on Research Policy (UCORP) has met and discussed the academic review of the California Institute for Information Technology and Telecommunications (CalIT2), one of the four California Institutes for Science and Innovation (Cal ISIs). UCORP provides general comments on the external review in the following sections as well as several comments from a system-wide perspective in the final section of the present letter.

CalIT2 Review Protocol:

UCORP finds that the charge given to the review committee was appropriate in scope and detail. Each of the 6 charge points identified the broad theme to be evaluated followed by a detailed question that could contribute to the evaluation. UCORP notes that the review committee answered all detailed questions, but in some cases the committee did not use the results to draw broader conclusions about CalIT2. Perhaps additional detailed questions under each broad theme or more explicit instructions to draw overall conclusions would have helped the committee more fully evaluate the program. For example, charge point 3 reads:

“Systemwide Efficiencies. How has CalIT2 impacted research by the development and operation of shared research facilities?”

The review notes the world-class shared facilities developed at each campus and goes on to describe how this approach benefits young researchers at those campuses. The external review does not comment on the broader question about systemwide efficiencies. In some dimensions, CalIT2 at UCSD and UCI act as two independent units. This leads to redundant research capabilities and management structures at each campus. It is noteworthy that UCSD classifies CalIT2 as an ORU while UCI classifies CalIT2 as a MRU. The external review is silent on these issues of broader efficiency.

CalIT2 Review Recommendations:

The review report recommends that (1) UC continue to invest in CalIT2 for at least the next 5 years, (2) a higher rate of investment be made at UCI to bring CalIT2 activities at both campuses closer to the same level, (3) CalIT2 should devise new ways to bring technology to the marketplace faster and encourage more formation of startup companies, and (4) CalIT2 should plan for an eventual leadership transition. UCORP notes that several of these recommendations could benefit from refinement to reflect historical and current funding strategies in the UC system.

CalIT2 does not currently fit the definition of a centrally-funded research entity in the UC system since it involves only 2 campuses. CalIT2 appears to operate as 2 individual campus ORUs rather than a collaborative enterprise across campuses. CalIT2 has succeeded in this format and provided strong returns on the UC investment. Future support should recognize the independent nature of the campus efforts by supporting CalIT2 as separate ORUs, or CalIT2 should continue to increase collaborations across campuses so that central funding is appropriate.

The recommendation that CalIT2 have similar activity levels at UCSD and UCI is commendable, but this was not a requirement of the original CalISIs program nor would it be a requirement for a future MRU. Meaningful collaboration across 3 campuses or 2 campuses and 1 national lab is a legitimate goal in order to fit the definition of a centrally funded MRU, but there is no need for equal levels of activity at all campuses.

UCORP notes that the third recommendation for faster technology transfer to industry is a systematic problem at UC which is not isolated to CalIT2. At its inception, CalIT2 was expected to eventually obtain 50% of its revenue from industrial sources. Meeting this goal will likely require the negotiation of a new model for IP sharing with industries, perhaps along the lines of a consortium model. The CalIT2 leadership may consider pursuing this strategy.

CalIT2 Review Process:

Overall, UCORP feels the CalIT2 review was well done with respect to historical operations but did not take advantage of the opportunity to comment on future directions for CalIT2. The original funding model for all of the CalISIs has not come to pass. It is not likely that the review recommendations to fully fund a professional staff at CalIT2 using centrally administered research funds will be acted on given the independent nature of the campus efforts and the current budget climate. The review charge might have better asked the committee about an appropriate future business model for CalIT2: as a campus ORU, as a systemwide MRU, or something else?

Other Comments:

UCORP notes that the 5 year UCSD CalIT2 ORU review was scheduled at approximately the same time as the 10 year external CalIT2 review. This disconnect again illustrates the independent nature of the current administrative structure surrounding CalIT2. The ORU review noted several issues of campus concern: CalIT2 should strive to increase participation by under-represented minorities, and CalIT2 should have stronger engagement with humanities and social science. The UCSD ORU review also recommended that the CalIT2 Director establish a fully transparent process for distributing the 'discretionary' fund based on a percentage of overall CalIT2 funding. UCORP generally supports these additional recommendations.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Kleeman", with a long horizontal flourish extending to the right.

Michael Kleeman, Chair

UCORP

cc: UCORP

Steve Beckwith, Vice President, Office of Research and Graduate Studies

Martha Winnacker, Executive Director, Systemwide Academic Senate



OFFICE OF THE PROVOST AND EXECUTIVE VICE PRESIDENT --
ACADEMIC AND HEALTH AFFAIRS

OFFICE OF THE PRESIDENT
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200

January 4, 2012

CHANCELLOR FOX
CHANCELLOR DRAKE

Re: Chancellors Review of the 2011 Calit2 Academic Review Report

Dear Colleagues:

It was our pleasure to meet with you or your representatives at the commencement of the Calit2 site visit. The Review Panel has now completed their work, and we attach a copy of their report for your consideration and comment.

We ask that you share your thoughts with each other and, along with Director Smarr, prepare a consolidated response to the Calit2 Review Panel Report on behalf of the two campuses. We also ask you to share this report with each campus' Divisional Senate for their review. We would appreciate receiving the joint Chancellors' response, plus the two Divisional senate responses by April 2, 2012.

Best regards,

A handwritten signature in blue ink, appearing to read 'Larry'.

Lawrence H. Pitts
Provost and Executive Vice President
Academic Affairs

A handwritten signature in blue ink, appearing to read 'Steve Beckwith'.

Steven V.W. Beckwith
Vice President
Research and Graduate Studies

cc: Craig Martens, Divisional Senate Chair, and Professor of Chemistry UC Irvine
Joel Sobel, Divisional Senate Chair and Professor of Economics, UC San Diego
Larry Smarr, Director of the California Institute for Telecommunications and Information
Technology

Enclosures

University of California
Governor Gray Davis Institutes for Science and Innovation

2011 Academic Review Panel for the California Institute for Information Technology and
Telecommunications (Calit2)

Report to the President
November 29, 2011

Introduction and Purpose

The California Institute for Information Technology and Telecommunications (Calit2) is one of four *Governor Gray Davis Institutes for Science and Innovation (GGDISI)* formed by the State of California and former UC President Richard Atkinson's office in 2000-2001.

Calit2 spans the UC campuses of San Diego and Irvine. The Institute has developed a world-class set of resources that no single researcher or principal investigator would, on their own, be able to create. The combination of these exceptional facilities, expert staff and strong leadership team has created a unique and enormously valuable asset for both UC and California.

The purpose of this review was to provide a comprehensive review of the Institute in order to guide and inform future investment by both the University of California Office of the President (UCOP) and the respective UC campuses.

Process

The Review Panel met by teleconference on September 16 to discuss the background materials with Vice President for Research Steven Beckwith. The Review Panel subsequently met October 12-14 and visited the Calit2 sites at UC San Diego and UC Irvine. Faculty, students, administrators, and staff from both campuses participated in presentations, discussions and tours during the site visit.

Members of the Review Committee

William C. Harris, Science Foundation Arizona, *Panel Chair*
John Gage, School Energy Initiative
Juan Lasheras, UC-San Diego, *Senate Representative*
Margaret S. Leinen, Florida Atlantic University
Greg Papadopoulos, New Enterprise Associates
Arogyaswami J. Paulraj, Stanford University

Executive Summary, Findings and Recommendations

Calit2 is a very special place. California investment in Larry Smarr and his team has created a kind of "idea amplifier" that has clearly become an attractor for Federal funds and talented faculty, a modern training ground for students, a place where academia and industry can meet, solve

problems together, and share in learning, and an ongoing test bed for new forms of research collaboration.

Both UCSD and UCI have new Calit2 campus buildings that currently house about 170 staff, a constantly changing group of faculty and students engaged in research, training, and collaboration with industry and other researchers, and specialized research facilities including a state-of-the-art clean room, semiconductor chip testing facilities, visual display and collaboration rooms linked across extremely high bandwidth links world-wide, video and audio immersive environments, advanced optical networking equipment, RF test benches for wireless prototyping, scanning electron microscopes, gene sequencers, and other expensive, state-of-the-art equipment, which, taken together, is perhaps unique for an academic setting in the US.

Our committee's review of Calit2 in October of 2011 has led us to the following four findings and recommendations:

- 1. Calit2 has been a tremendous success; we recommend that the University of California continue to invest in, and provide operational support for, Calit2 for at least the next five years.**

Our observation about the transformative impact of Calit2 at UCSD is a very strong assertion, given the remarkable status of UC San Diego as one of the most innovative universities worldwide. Even more strongly, while we understand that the progress over 10 years has been substantial, we believe that Calit2's achievements could have been even greater if the financial support for its base operations had been met annually. UCOP should overtly recognize Calit2 and other successful institutes as engines of change and opportunity for California.

For UC to continue to lead in education and research innovation, it must provide a bold road map to the future that establishes select UC Institutes as transformational models system-wide. We encourage UCOP to set high performance bars for education, research, and economic expectations that benefit California directly. Although we have not reviewed the other GGDISI institutes, the performance and achievements of Calit2 suggest these institutes may be unique experiments in 21st century education and research innovation that could 'graduate' during the next five years¹ from UCOP to inspire innovation more broadly throughout UC. Truly effective institutes offer the opportunity to create a more dynamic and agile UC system – connecting to California business and government in new ways.

- 2. The rate of development of Calit2 between UCSD and UCI has been imbalanced, with UCI lagging; we recommend that the recent higher rate of investment at UCI be encouraged strongly, and that UCI should make Calit2 a significant institutional priority.**

We were surprised to learn of the large imbalance in the distribution of staff between UCSD

¹ We think the pledge of 10 years of support from UCOP is not appropriate for any of the institutes; rather, we recommend identifying the most successful institutes and supporting their operations at appropriate levels for success for an additional five years. During this five-year period, the institutes should be fully integrated into the campus budgets in order to help shape and guide innovation campus-wide.

and UCI that evolved during the initial 10 years. UCSD has a larger and more experienced staff than UCI (approximately 150 of the total 170) because of consistent financial investment and institutional commitment of the UCSD Chancellor.

The data we reviewed suggest that UCI has not supported and developed its Calit2 asset as well as UCSD during this period. However, we were encouraged that the new UCI Vice Chancellor of Research has recently taken steps to address the lack of previous investment. UCI is positioned to powerfully and effectively impact its region's economy if Calit2 is supported as a priority.

3. **Although there are a significant number of companies with relationships with Calit2 and local industries are certainly benefiting from the unique facilities and expertise, much more direct economic impact should be possible. We recommend that Calit2 study afresh ways of promoting greater outbound technology transfer and start-up formation, as exemplified by QB3 and CITRIS.**

Many companies are benefiting from access to unique technology at Calit2 than would otherwise be too expensive or simply impractical to acquire, especially for small and medium-sized regional technology companies. This has led to direct working relationships with about 330 companies, in addition to more than 1000 indirect relationships. These large numbers reinforce Calit2's value to industry.

While facilities- and project-related industry interactions appeared vibrant, we did not encounter as strong a culture around direct technology transfer to industry -- it appears that only a few startup companies have formed out of the Calit2 ecosystem. We recommend that Calit2 study afresh ways of promoting greater outbound technology transfer and start-up formation. We would urge a close examination of the best practices of other GGDISI Institutes. We would also urge that the goals be to *maximize* the success of technology and knowledge transfers with their subsequent impact on California's economy, rather than metrics of licensing revenues back to UC or of the profitability of incubators for their host institutions.

4. **Calit2 has grown and thrived under the superb leadership of Prof. Larry Smarr, so we are naturally concerned about the future of Calit2 without such a leader; we recommend that succession planning and continued development of the leadership team be addressed creatively.**

Calit2 has been described by some of the faculty and staff as the single most transformative element of the UCSD campus in decades. Many in the San Diego business community state that Calit2 is the 'go to' place for access to UCSD faculty, advice and laboratory support and we credit that to the outstanding leadership of Director Larry Smarr and his team.

Given Director Smarr's ability to work effectively with the business and academic communities in both universities, we are concerned about Calit2's future without such a leader. In the start up phase such a leader is critical to success, but now it is important for Calit2 to recognize its vulnerability and begin to explore realistic succession plans consistent with a modern enterprise and not simply rely on the 'national search' mechanism. In the end, a 'national search' may be the process but a novel entity like Calit2 should develop novel search criteria, emphasize leadership in both the academic and

business communities, and begin now a natural and effective a transition to a succession plan to assure that innovation continues.

Responses to UCOP Questions

To prepare for the review, the UC Office of the President asked the committee to provide responses to a set of six questions about the performance of the Institute with respect to its original mission and over time, as well as to provide recommendations for the future. The questions, and the committee's response, constitute the central part of this report.

Q1. How has Calit2 increased external funding and developed emerging fields? Challenges/opportunities for the future? What changes in UC practices could be helpful to innovation?

Calit2 has increased external funding, particularly by enabling the faculty and staff to pursue large and complex Federal and other foundation grants that could not be pursued at the departmental level, or that require the kinds of advanced equipment, facilities and professional staff created by Calit2.

Calit2 has a complex algorithm to attribute the external funding -- largely because faculty members are 'assigned' to departments, not to the Institute. However, the information we reviewed has convinced us that substantial amounts of the funding that UCSD received in the thematic areas represented by Calit2 is due to the success and existence of Calit2: for example, Calit2 has enhanced proposal submission rates compared to the average for departments. The data at UCI is not as clear, but it has the same potential if UCI makes Calit2 a priority.

We describe Calit2 as a unique 'infrastructure' asset to UC -- it enables things to be done that could not otherwise be easily attempted on a single university campus. We would not characterize Calit2 as being 'strategic' or planned, but rather as a very flexible and opportunistic entity. We conclude that being flexible while maintaining the highest standards of excellence is the most effective way for a university center to help enhance private sector success while educating undergraduate and graduate students in an entrepreneurial culture.

Calit2's work on the UCSD campus is highly respected by the local business community due to the accessibility and personal skills of Dr. Smarr that have really defined this relationship. However, it seemed to some in the business community that the UCSD and UCI campuses are not especially accessible due to administrative and procedural barriers that are *perceived* to exist. We learned this may derive from system-wide policies and must be addressed at that level to make sure best practices are really in place at *each* campus, especially in interactions with start-up companies and other smaller businesses.

Q2. How has Calit2 fostered institutional innovation in research, teaching, and engagement with the external parties? Clear examples — perhaps by having a couple of beneficiaries comment?

The best example we saw of a concerted effort to engage an external party over time was the effort to assist in the control of California wildfires. The engagement with fire and police departments was substantial with the critical work around this partnership initiated many years ago. It has strengthened over time without question. We were pleased to learn about the recent focus on water challenges that face California and encourage Calit2's potential for exceptional contributions to collaborative problem solving in this area. In fact, we encourage expansion of this type of collaboration-enabling effort to other areas that challenge California (i.e., land use, drugs, weapons tracking, illegal immigration, coast line issues, taxation.) that would benefit from the creative technology and thinking at Calit2.

We thought the small business start-ups at UCI were encouraging; most of that work derived from faculty projects and ideas. The new company incubator on the UCI campus has made a good start, leading us to wonder why UCI did not begin earlier?

Part of the problem may be local culture -- as the two campus sites are very different with different histories. The recent appointment of a new Vice Chancellor for Research at Irvine may help Calit2 advance more effectively. More broadly, the GGDISI may provide each UC campus, singly and collectively, with new mechanisms to increase their economic impact beyond their current role as major employers and business entities in their regions.

Q3. How has Calit2 impacted research by the development of shared research facilities? Again, clear examples from users after an overview? Cost/benefit?

There are two mutually interdependent components of Calit2's shared research facilities: the Calit2 physical facilities, and the Calit2 professionals who staff them. Researchers unanimously praise their quality, emphasizing the critical role played by professional staff. A common comment: "Even if we could find the million dollars for a new mass spectrometer, we could not find the money, or, more importantly, the time to develop the professional staff to operate it. Calit2 fills this critical role."

Calit2 provides major equipment and staff support for the School of Engineering at UCSD, particularly for new faculty and new research initiatives, and has become indispensable in faculty recruitment. Calit2's role at UC Irvine is significant and can grow into a similar 'model' for UC Irvine. There seem to be more silos and problems at Irvine; that is difficult to judge during a short site visit, but is the impression we come away with.

The nano science/engineering facilities at both sites are exceptional, as is the manner in which they have opened up these significant assets to partner with industry. The faculty, particularly at UCSD, has come to recognize the value of shared lab facilities for costly and complex instrumentation that gives them a competitive advantage in their research programs, while reducing their concerns about maintaining equipment in their own labs. In several instances, expensive equipment initially purchased for a single Principal Investigator's lab was moved into the new Calit2 shared lab facility, so faculty and students across Calit2 could use equipment that previously only allowed access to a single research team. By policy, all Calit2 facilities are shared, which may sound simple, but represents a major cultural shift for advanced researchers. Additionally, Calit2 is a world leader in developing immersive networked collaboration environments, to enable researchers at any

location to utilize equipment across an extremely high bandwidth network as if they were working locally.

UCSD faculty expressed great respect for the exceptional technical staff at Calit2. We did not sense any problems between "faculty" and "technical staff" due to faculty recognition of their value in rapidly changing, highly competitive research fields.

We were very impressed by the capabilities that Calit2 provided for new faculty. We saw multiple examples of young faculty who were able to initiate research on extremely challenging technical and/or multidisciplinary problems during their first one or two years at the universities. This capability puts the faculty at a substantial advantage over their peers at other institutions that lack Calit2's deep technical support. At other institutions, young faculty are more likely to focus on research that can be accomplished with the instrumentation in their start-up labs, often only incrementally more advanced than their dissertation and post-doc research.

In estimating the cost/benefit ratio of Calit2's deep investment in facilities and staff, the review team strongly believes the talent assembled and the facilities provided are a unique resource for California scientific and technological research. We are concerned that as UC budgets are reduced, there will be pressure to curtail technical staff positions to protect the faculty. If that occurs, there will be an irreversible erosion of talent and capability necessary to fully utilize some of the world's most advanced research facilities. *We sensed there is real and obvious stress and pressure on the staff to do more with less.* We would like to express a concern that this issue must be recognized as a significant threat to Calit2's success.

A strategic investment policy by the UC system to fund the core operations of the institutes would enhance the return on investment to the citizens of California by reducing the uncertainty that is making it difficult to manage these important assets. The institutes might be considered *incubators* for 21st century education and research in UC.

Q4. How has the creation of Calit2 made a difference to California?

Fifty years ago, California created the Master Plan for Higher Education, bringing the world's leading research universities into a hierarchical partnership with community colleges and state colleges. The original land-grant university promise of affordable and accessible education was extended to bring a new flow of human talent into the most advanced research areas. California's economy thrived as new technologies in aerospace, electrical and electronic engineering, chemistry, computing, telecommunications and agriculture were applied to create new industries and products. Today, the world has changed fundamentally. Research is globalized, dozens of countries are making equivalent investments in higher education and research, and California, though still a world leader, is one of many centers investing to discover the future.

This is the prime motivation for investment in the GGDISI Institutes: to keep California at the forefront of research, innovation, and institutional re-invention for the future.

Calit2 is a bold attempt at organizational innovation. The accomplishments are dramatic and obvious at UCSD; less so on the UCI campus. Going forward UCI has the opportunity to become a true regional catalyst and has begun to make the investments needed to do so. While the institutional progress at UCSD is obvious there are opportunities to manage its overhead funds more effectively and enable the university to invest in new areas and not be limited by history or

original design. We suspect many of positive changes we saw at UCSD are as much a result of the Smarr effect and determination to make a positive difference for both UCSD and UCI.

We conclude that Calit2 has been hugely successful but we cannot argue it has yet made a true difference in the UC system or California; rather, the fact that it is has done so well seems almost in spite of the Darwinian culture of UC and is more a credit to the Calit2 leadership team whose ambition for excellence and innovation is so contagious.

Q5. How does the organizational and leadership structure support the creation of a successful multi-campus institute? Lessons learned? Impact of tech transfer and/or contract office?

The Institute has been an unqualified success in creating a model of excellent, professionally staffed, laboratory infrastructure. These labs and their staff provide real productivity leverage as "idea amplifiers" for UC researchers. Many of these labs are advanced enough to attract users from regional high-tech businesses, no doubt benefiting their competitiveness while creating at least the conditions for deeper university-industry interactions. Companies can benefit from access to unique technology that would otherwise be too expensive or simply impractical to acquire, especially for small and medium-sized technology companies. Indeed, the photonics laboratories at UCSD, the microscopy lab at UCI, and the nanofabrication facilities at both campuses are world-class and no doubt offer California businesses unique competitive advantages.

Not only are these facilities made available to local businesses on an hourly recharge basis (approximately 40% higher than the internal rate charged to UC researchers), local companies also can contract Calit2 staff to assist in projects such as circuit design. Companies can also benefit by integrating their products into a larger research system, and getting direct feedback and assessment of performance and suitability. Calit2 reports direct working relationships with about 330 companies², in addition to more than 1000 indirect ones. Several of these relationships are quite significant. Qualcomm has provided more than \$25M (out of a total of \$100M) in support to Calit2. Other leading California companies with substantial partnerships include Intel, Cisco, Oracle/Sun Microsystems, HP, AMCC, Emulex, CODA, and Intersil. CineGrid is an excellent example of a public-private partnership in digital cinema and very high performance networking that is helping transform the movie industry, one of the cornerstones of the California economy.

It will be very useful to elicit feedback from these major contributing companies as to the range and quality of interactions between them and Calit2, and seek suggestions for revamping these where necessary. It also worth noting that Broadcom whose HQ and more than 1500 research staff though located on UCI campus has not supported Calit2 in a meaningful way. Calit2 should work on building a stronger Broadcom relationship. No doubt IP ownership concerns block some of these relationships. However, these need to be addressed head on and resolved.

Although these interactions are significant, it appears that only a few startup companies have formed out of the Calit2 ecosystem³. We were encouraged by the TechPortal incubator at UCI. Since its creation in 2010, four companies (out of a total capacity of eight) have occupied space in UCI Calit2 building. In addition to physical facilities, these startups have access to Calit2 labs,

² 2011 Academic Review Report of Calit2 Section II – Page 120

³ While established companies have benefited from technology transfer, we could only find evidence of two startups that were a deliberate consequence of Calit2: CODA Genomics and Hiperwall Inc.

mentoring programs, and expertise. All of the companies we visited at TechPortal seemed delighted with the connection with both the university as well as local Orange County business development organizations (e.g. OCTANe). There is no equivalent Calit2 facility at the UCSD campus.

The committee also heard significant frustration from one startup (in San Diego) that while the Calit2 facilities and research staff fundamentally enabled them to get their product to market ("a unique capability offering the best of both worlds"), the university's contract organization "is a disaster". The feeling of this startup is that both the contracting process and terms are antagonistic, rather than supportive, of a startup's IP and fundraising needs.

The committee recommends that Calit2 study afresh ways of promoting greater outbound technology transfer and start-up formation. Our impression of the other Gray Davis Institutes is that QB3 and CITRIS could offer best practices for start-up formation. We also encourage the goals and licensing models be centered around maximizing the overall impact on California's economy, and not focus narrowly on the economic return to UC from the research of a faculty member, or a incubator/center. Stanford University's faculty consulting with industry and technology licensing model has catalyzed many start-ups and is worth studying.

Q6. How has the allocation of resources among activities supported Calit2 's goals and mission? Has the reduction in promised core support led to missed opportunities?

The resource allocation -- if judged in purely abstract terms -- seems fine. Outstanding facilities have been built; first rate faculty and students are engaged and the supporting technical staff is outstanding as well. What we sense, however, is growing concern and frustration over the inability to plan as effectively as possible given the uncertainty of the UCOP investment in the operation funds. We understand the financial uncertainties and challenges all are facing and respect that it may not be possible to fully meet the originally promised \$10M/year for each Gray Davis Institute. However, the current uncertainty over funding is really not an effective way to manage resources or to lead in a way that will truly be transformational while assuring UC excellence. The missed central support has limited what could be achieved for California because the uncertainty has led to staff constraints and missed opportunities which we sense could have been truly innovative for California.

UCOP needs to set priorities and adequately fund the most effective Institute(s). However, we do not recommend 10 more years of funding. A five year funding period that is transitional should be enough but the campus sites need to integrate the Institutes into the campus and use them as innovation models for other campus entities so that the university is reinventing itself in the support of the most important and exciting scholarship and education delivery systems for the 21st century. The campus leadership should be accountable annually for progress in this area.

The campus may well need a new way to do all of this. The overhead costs that should be available to run operations are distributed instead to central budgets or colleges in a very archaic model. It is based on history and is an obstacle to the future. The UCOP and UC-Chancellors should develop a new model that recognizes the needs of the centers as well as the needs of faculty and colleges that participate in research at the center.

We would like to see more engagement with industry over the next five years. The paradigm of "lab for hire" that has built very successfully so far should be complemented by an "innovation-commercialization" thrust. A number of initiatives can help promote this. A regular seminar on company formation and financing with speakers drawn from entrepreneurs and venture capital community would be a good start. Some mechanism (perhaps a forum) aimed at faculty-industry exchanges that catalyzes faculty's ability to interact with and draw research problems from industry can be another initiative. The current paradigm for academic research (thanks in part to NSF's funding model) is to work in an open loop relationship with industry. Calit2 can be a path breaker in this closer academia-industry partnership.

The Director should establish a fully transparent process for distributing the 'discretionary' fund that is a percentage of overall Calit2 funding. It would be wise for the Director to regularly acknowledge that the Calit2 operational funds are taxpayer money, and that Calit2 is a wise and prudent steward, using taxpayer money to make Calit2 more innovative and successful, particularly at the industry and economic interface.

Summary

We believe Calit2 represents a successful investment by the State of California, offering a demonstration of education and research innovation appropriate and essential for the University of California. We are confident that Calit2 can evolve even further and become far more successful in demonstrating the clear value added of great research universities and the private sector working together to advance California economically. While UC-San Diego has significantly distinguished itself with its commitments and support over the past decade, it is essential for UC-OP and UC-Irvine make sure their investment ensures true system-wide impact over the next 5 years. We are confident that Calit2 can distinguish the UC system even further as a place of innovation and leadership in research and education.



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January 7, 2014

Bill Jacob
Chair
Academic Council

SUBJECT: Academic Review of CalIT2

Attached are the comments of the San Diego Division Committee on Research regarding the academic Review of CalIT2.

A handwritten signature in cursive script, reading "Kit Pogliano".

Kit Pogliano
Chair
Academic Senate, San Diego Division

Cc: Clare Sheridan
Martha Winnacker

October 24, 2013

CHAIR KIT POGLIANO
Academic Senate, San Diego Division

SUBJECT: UCORP Response to Academic Review of the California Institute for Telecommunications and Information Technology (Calit2)

On October 21, 2013, the Committee on Research (COR) discussed the UCORP response of May 16, 2013 to the academic review of the California Institute for Telecommunications and Information Technology (Calit2).

We generally agree with the positive tone of the review, and the fairness of the review. The review recommends that Calit2 develop strategies to increase industry-derived income, and Calit2 is indeed already doing so.

Members of COR expressed two concerns about the letter.

First, the UCORP letter asserts that the current "definition of a centrally-funded research entity" comprises at least three campuses, and recommends that "Future support should recognize the independent nature of the campus efforts by supporting Calit2 as separate ORUs, or Calit2 should continue to increase collaborations across campuses so that central funding is appropriate." Some members of COR thought it important to stress that the dual-campus structure was recognized as appropriate at the time that Calit2 was created. Calit2 is certainly well positioned to expand to additional campuses, and should be encouraged to do so as appropriate, but some members of COR expressed concern that to insist that a successful dual-campus entity seek out a third campus as a nominal partner *solely* to satisfy a new rule would appear to create a perverse incentive.

Second, some members of COR expressed concern that UCORP's letter appears to take the review committee to task for recommending a level and method of continued funding that UCORP finds unrealistic under current University resource constraints. We appreciate that review is difficult in a context of constrained resources. But we think it is important to the mission of the University that our processes preserve the distinction between academic review and budgeting.

A review committee that is charged with reviewing a particular unit does not have the full budget and research portfolio of the university before it, and therefore is not in a position to make well-informed judgments about the opportunity costs of particular resource commitments. Nor should review committees be asked to guess just how much the university can afford before deciding whether to recommend continuation of a research enterprise. The purpose of academic review is to decide which university activities are meritorious. It is the purpose of budgeting to determine which among the many meritorious activities we can afford to fund.



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cc: G. Boss
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