

**Committee on Research
Annual Report 2015-16**

To: Academic Senate, Santa Cruz Division

The Committee on Research (COR) is charged with reviewing the campus and system-wide policies and issues related to the campus research mission. The committee also advises and collaborates with the Office of Research in support of faculty research. It directly supports campus research by awarding faculty research grants, special research grants, and travel grants.

In 2015-16, the Committee on Research addressed a broad range of issues of significance to campus research policy and infrastructure. Most importantly, we continued a campus-wide survey and evaluation of shared research equipment and facilities, which will require follow up by the 2016-17 COR. COR continued to consult with Vice Chancellor Research (VCR) Brandt about policies and structures within the Office of Research (OR) and other issues related to the research climate on campus, new initiatives for seed funding, and the NASA Academic Mission Support (NAMS) proposal. COR has also coordinated with the Committee on Information Technology concerning the university policy for computer replacement because this is impacting research. Much of the Committee's time, particularly during winter quarter, was spent evaluating proposals and making awards through our various faculty research grants programs (FRG, SRG, NFRG), and we have introduced a modified funding model to exploit UCSC's research strengths. In addition, COR collaborated with the Sustainability Office to evaluate proposals for the 2016-17 Campus Sustainability Champion award, funded by the Office of the President. We have also evaluated new research center proposals for both Open Software and Data Science, and participated in defining the process for the Institute for Marine Sciences evaluation, as well as campus policies for more general Organized Research Unit (ORU) evaluation.

An overview of the committee's work in 2015-16 follows:

Activities Regarding Matters of Research

Shared Research Facilities and Equipment

The committee has been working towards documenting shared research infrastructure and equipment across the campus. This survey is part of COR's larger agenda to examine the current state and future possibilities for research infrastructure on campus. Successive years of cuts have led to reductions in support for faculty research via direct COR funding. Perhaps more significantly there have also been cuts to both shared research equipment and technical support at the divisional level. Our goal with the survey was twofold. First, by documenting and publicizing such research resources, we hope to make them more readily accessible to campus researchers, as well as prospective faculty hires, post-doctoral candidates, and graduate students. Such documentation should also reduce the unnecessary duplication of similar facilities by different researchers. Second, we hoped in our survey to identify situations where research resources are underutilized or unused, where strategic support from the Office of Research or divisional deans might allow these resources to be better exploited. To this end we specifically requested that deans inform us of strategic opportunities to better exploit research resources. In addition, we requested that for each research resource the respective division specify how that resource might be used by others (contact, cross charging model or booking method), as well as stating, where relevant, the level of

technician support for the resource. COR received responses from all of the divisions. We are currently working with the Office of Research to create a website cataloging these shared research facilities and resources, as well as the methods for accessing these. This should allow campus researchers to better exploit these resources. The committee will continue this initiative during 2016-17. We will work with the Office of Research to assess and potentially redress issues related to management, staffing, funding models and sustainability of these facilities. In particular we want to explore how these resources might be better publicized and exploited.

Faculty Computing Support

In 2015, the committee consulted with the Campus Provost/Executive Vice Chancellor Alison Galloway on making it a campus priority to restore funding for faculty computing equipment and software but we remain deeply concerned that faculty are not provided with the necessary equipment to engage in basic teaching, research, and service activities.

In 2015-16, COR continued discussion of the appropriateness of COR research funding being allocated to routine computer equipment and computer replacement. We also reviewed divisional policies for purchasing and replacing faculty computers. Due to budget cuts, campus faculty computers are no longer upgraded on a regular or consistent basis within divisions. At least three of the divisions (Social Sciences, Physical & Biological Sciences, and Baskin School of Engineering) no longer provide any support to replace faculty computers. In contrast, most campus units continue to replace staff computers as needed. Faculty also report that there is decreased support for computing equipment by federal funding agencies as funding such basics is considered by these agencies to be the responsibility of the institution (see UC Systemwide Uniform Guidance Workgroup Assessment Report, December 5, 2014).

This has emerged as a clear problem as recent years have seen increasing numbers of Faculty Research Grants requesting funds for replacing outdated computers. The absence of campus support has led to faculty attempting to replace computing equipment by applying (in COR's view inappropriately) for COR grants. In COR's FRG/SRG grant reviews, we saw further requests for replacement of standard computing equipment and upgrades, which we deny as a matter of policy, although if faculty apply for specialized computing equipment that is required to support their research we will review such requests. We should also note that we clearly publicize this policy on the grants application website. Nevertheless, such computer equipment replacement applications consume both faculty time in writing denied proposals as well as COR committee time in reviewing them. COR remains clear in its position, that it is the administration's responsibility to provide faculty with the computing equipment and software necessary to support basic teaching, research, and service activities. An additional independent consideration is that there are also economic and security issues associated with the costs of maintaining and upgrading obsolete equipment. We hope to see the central administration and divisions make restoring funding for faculty computer replacement a priority in the coming year.

To this end, COR Chair Whittaker consulted with the Committee on Information Technology (CIT) following both committees' shared concern about the lack of basic computing equipment resources. COR and CIT wrote to the divisional deans advocating a review of the computer replacement policy and encouraging deans to create a plan to restore computing equipment funding in the upcoming academic year. We have received a response from the Division of Social Sciences

indicating that they may restore funding. Both committees will follow up with the other divisions in the upcoming year. We believe that this is an important need that requires institutional support.

Developments to the Faculty Research Grants Process

COR invested several meetings in reviewing and extending the faculty grants process in consultation with VCR Brandt. Our goal was to explore ways to identify, reward and showcase grants that are consistent with core research strengths of the university. In our modified grants process, VCR Brandt provided additional funding support for grants that were consistent with key UCSC research themes. These themes had previously been identified by the Committee for Planning and Budget's initiative to identify research clusters as part of the Faculty Initiated Group Hire (FIGH) program. Special Research Grants (SRGs) consistent with these themes were evaluated during the regular grant review process, and three outstanding grants identified. These three proposals each received additional seed funding, doubling the awards for these applications. These successful proposals are detailed below. COR acknowledges the support of the Office of Research in supporting these three proposals. The Office of Research was also generous in supplementing the regular COR budget to support several other highly competitive proposals that would not have been funded otherwise. Next year, COR will explore modifications of this new process that facilitate collaborative research, possibly involving a series of themed workshops.

Updates and Consultations with the Office of Research

The committee continued to extend a standing invitation to Vice Chancellor for Research Scott Brandt to attend COR meetings (except those where we reviewed faculty and special research grant proposals) to consult on issues of mutual concern regarding research policy and climate on campus.

Academic Analytics. The Office of Research has been using the analytics database to explore opportunities to strengthen campus research by strategically reviewing divisional and departmental scholarly productivity, submitted and approved grant proposals, along with comparative data from similar institutions. COR met with Tedd Siegel (Assistant Vice Chancellor of Research) to discuss the deployment of Academic Analytics. While such data have been used in the past to review research strengths across divisions and departments, COR members are concerned about this seemingly underutilized resource given the subscription charge for the analytics database. At the same time the committee expressed concern about potentially evaluative applications of such information. It was noted that such data is viewed only in the *aggregate* (e.g. center, division, department) and is not used for individual or personnel review. The committee would like to work with the Office of Research next year revisiting this issue to better understand how the benefits of this technology might be balanced against these concerns and to explore with VCR Brandt opportunities to present such information to each department allowing them to better understand how this can better facilitate their research.

Office of Sponsored Projects Unit. Director Kate Aja provided an overview on the Office of Sponsored Projects (OSP). The committee explored with Director Aja faculty concerns about grant submission and support. In discussions, Director Aja acknowledged OSP's challenges in processing the different types of overheads, waivers, creating budgets, and having to balance researcher expediency against university and funder policy. Other delays may arise from UC requirement that there is an agent for the Principal Investigator to accept and manage the funds while it's not required by the agencies. Next year, COR will continue to explore repeated faculty

concerns and work with OSP to address these issues. COR notes with approval that OSP is working on being more proactive, creating opportunities to inform faculty about processes and policy, in particular in supporting the Arts and Humanities. COR also welcomes the creation of new OR positions (Mohamed Abousalem, Assistant VCR and Audrey Levine, Director Research Development) that will allow the Office of Research to be more strategic in supporting research, particularly in the areas of funding agencies and industry partnerships.

COR also discussed relations between foundation related gifts and grant support and noted with approval the closer links between the Office of Research and University Relations. Our committee also noted efforts to publicize research across the campus in the form of the Inquiry Magazine. COR is very supportive of these developments.

We also discussed research training and grant workshops. The Office of Research held a Research Development Conference and hosted an early career grant writing workshop to provide training and ongoing professional consultation. The Office of Research would like to offer such courses on a yearly basis and have them taught in-house rather than by an external consultant, developments that COR enthusiastically supports.

Further initiatives discussed by COR and VCR Brandt include publicizing shared research resources within divisions, updating the research website to include such resources, providing agency centered support, and incentives for faculty to pursue large collaborative projects with the dedicated infrastructure for proposals. We are also interested in exploring research opportunities involving the new Silicon Valley Campus. We will follow up on these opportunities in 2016-17.

Research Grants

Our main activity during the winter quarter involves grant reviewing. In 2015-16, the committee had two funding sources: the University Opportunity Fund with two components and a small amount from the Earle C. Anthony Endowment.

Budget Source	Amount
Opportunity Fund – Indirect Cost Receipt from federally funded grants	\$300,124
Education Fund – Indirect Cost Receipt from privately funded grants	\$56,000
Earle C. Anthony Endowment	\$3,839
Total	\$359,963

Each year, the committee solicits applications for its three research programs: New Faculty Research Grants (NFRG), Faculty Research Grants (FRG) and Special Research Grants (SRG). This year there were 177 proposals, of which 106 (60%) were funded. This represents an increase of 14% over 2014-15. Our approach followed prior COR policy in using our budget to fund the majority of FRGs. Furthermore, this year the Office of Research provided additional seed funding for SRGs. We were also attentive to the need to support non-tenured and more junior faculty. Overall we were able to fund approximately the same number of proposals as 2015-16.

New Faculty Research Grants (NFRGs). The NFRG programs provide new faculty access to funding in the current fiscal year. It has proven helpful to new faculty as they establish their research careers. Of the 16 NFRG requests, 15 were funded. The award amount increased from last year's \$16,989 to \$27,218 this year following an increase in new faculty applications and proposals funded.

Faculty Research Grants (FRGs) and Special Research Grants (SRGs). As noted earlier, we modified the Special Research Grant submission and evaluation process to identify outstanding proposals addressing UCSC-relevant themes. VCR Brandt generously provided matching seed funds to support those special research grant proposals related to the themes of cultural crossings, data science, and sustainability that had previously been identified during CPB's Faculty Initiated Group Hire (FIGH) process. The committee received twelve theme research related projects which were considered for additional seed funding. The committee awarded additional seed funding to the following proposals:

- Jarmila Pittermann, *Ecology & Evolutionary Biology for Sustainability: The heat is on: the effects of elevated temperatures on understory ferns across the range of the redwood forest* (\$16,000)
- Kristina Lyons, *Feminist Studies for Sustainability: Comparative Research on Transformative Agro-Environmental Politics in Columbia and Turkey* (\$15,900)
- Lars Fehren-Schmitz, *Anthropology for Cultural Crossings: The Black Death in Africa: A paleogenomic study of global disease transfer and cross-cultural interactions* (\$15,712)

VCR Brandt has graciously offered to provide another year of seed funding for the COR's research grant program in 2016-17. The Office of Research continues to be interested in seeding research in new areas or to create opportunity for collaboration especially with scholarship where it's more difficult to obtain funding which can leverage new sources of funds. COR will continue to consult and collaborate with the VCR in support of these goals. In particular we will explore opportunities to support collaborative research.

While it is hard to draw concrete conclusions about the success of this new initiative on the basis of a single year, we were nevertheless pleased to see an increase in the number of funding applications which were up 14% from 155 in 2014-15, to 177 in 2015-16. At the same time, this increase in applications represents a challenge given that our base funding has remained static over this period, so that we are able to fund proportionally fewer proposals than last year.

Travel Grants. The committee also supports faculty travel to scholarly meetings and intercampus grants for faculty or graduate travel to research facilities, field stations, and sister UC campuses. Senate faculty may apply for the \$700 or \$250 travel grant respectively, provided the travel meets eligibility guidelines. This year 201 grants were dispersed.

Our overall spending for all grants is below. Note that our spending this year was greater than our income, as we had carryforwards from 2014-15. Despite this one-time increase in funding we were still compelled to turn down deserving grant applications, a situation that will be exacerbated in subsequent years, especially if submissions continue to rise.

Research Grant Program	Funded	Amount
New Faculty Research Grants	15	\$27,218
Faculty Research Grants	69	\$109,637
Special Research Grants	22	\$164,274
Scholarly Meeting & Intercampus Travel	201	\$136,419
Total	301	\$437,548

Faculty Climate Action Champion Award

The Sustainability Office requested that the COR committee assist in reviewing the Faculty Climate Action Champion Award proposals. As part of President Napolitano’s Carbon Neutrality Initiative, the Office of the President provided the campus with funding to promote faculty innovation and leadership on climate action and sustainability. The selected Champion is expected to apply their expertise towards advancing research and education surrounding climate action, providing a public lecture at the end of their tenure to discuss their work and activities as Champion. COR reviewed the call and application process. Members then reviewed the proposals and provided our recommendation for Kristy Kroeker, Assistant Professor of Ecology & Evolutionary Biology on her proposal to expand her research on the ecological effects of climate change and ocean acidification to include the potential repercussions of these changes on human health, as well as potential nature-based interventions in the ocean.

Despite the strength of the recommended proposal, the committee was concerned about the amount of notice for the award call. The short submission period meant that just three applications were submitted. If the award continues next year, the committee would like to collaborate on an outreach plan with the Sustainability Office, with much more notice being provided, and details of the call supplied more directly to researchers in the area of Climate Action across all divisions, so that a broader set of high quality proposals can be solicited.

Other Committee Business

The committee also provided feedback to new proposals concerning Organized Research Units (ORUs) and Centers.

Organized Research Unit’s Five-Year Review Process. Organized research units (ORU) on campus have not been adhering to the Regent’s policy of periodic five year review. The Office of Research has therefore recently proposed adapting the department review self-study process for the ORU review process. The Office of Research initiated an ORU review with a self-study for the Institute of Marine Sciences (IMS) and following this will be the Genomics Institute. Committee members assisted the Office of Research by commenting on the planned review process and in reviewing the potential candidates to serve on the external review panel for the

Institute of Marine Science. We should also note that our recommendations for the review committee were largely not acted upon.

The committee reviewed the draft ORU five-year review process documents and provided comments and feedback to VCR Brandt. We recommended that the review clarify the role of the Committee on Planning and Budget as evaluations of research units on campus have clear budgetary implications. We also felt that reviews should involve input from Graduate Council as there are clear grad student concerns. Next year, the committee will follow up on the status of the Institute of Marine Science review, the ORU five-year review process documents, and consult on the emerging Office of Research's ORU review process.

We also reviewed various proposals for new centers.

Center for Research in Open Source Software (CROSS) Proposal. The Computer Science Department proposed a novel research center that combines the goals of a public research institution (with the mission of creating knowledge for the public good), and industry (whose goals are commercial). The funding model proposed by CROSS involves using an alumnus sponsor's gift to establish a center and leveraging industry memberships to sustain it. While this is not typical for a campus research center, nevertheless the committee felt that the proposal presented a cogent plan, with projects being agreed with sponsors and research products being generated as open-source software. While generally being supportive of the new center, COR members noted the heavy emphasis of the center's mission on commercial research and expressed concern that the research might be biased toward the interests of industry partners. We recommend adding an "at large" faculty member, who is not an affiliate of CROSS to the Institutional Advisory Board – someone with broad knowledge of Software Development. This "at large" member can provide external advice and input to help balance the interests of industry members with our mission as a public research institution. That said, the committee was highly supportive of the proposal, and we are looking forward to hearing about its outputs.

Data, Discovery and Decisions Center for Excellence Proposal. The committee was also positive about the proposed center from the Computer Science, Applied Math & Statistics, Economics and Technology Management departments. The proposal includes external industry consortium partners. We recognized the clear opportunities in this exciting research area, given recent interests in methods and findings surrounding large scale data analysis. While being very supportive of the center, COR felt the proposal's start up plan could be strengthened by providing more detailed descriptions of research and benefits to the campus, clarifying how the Center will operate in relation to consortium partners and listing potential partners or targeted companies, their level of commitment and prior relationships. In its current form, it is unclear who the Center will be requesting funding from and the contingency plans if there are additional grants or if membership goals are not met.

Student Success Evaluation & Research Center. The Vice Provost for Student Success drafted a proposal to expand the scope of the Student Success Evaluation & Research Center. COR felt that this Center has clear potential to improve the undergraduate academic experience which is critical for the success of the campus. Nevertheless, the committee felt that the proposal could be enhanced by a clearer definition of student success with accompanying statements about the center's anticipated contribution to such student success. We also felt that the types of collaborations

supported by the center could be made more explicit. The committee also recommended more directly addressing some of the critical areas for student success, such as course and major impaction, core writing and prerequisite courses, and engagement with the Hispanic Serving Institution program initiatives.

The committee discussed and provided feedback on various issues to the Academic Senate and research related proposals, including:

- Vice Provost & Dean Undergraduate Education Standard Time Slots Proposal
- UC Openness in Research
- Revised Library Funding Proposal
- Draft Campus Wet Lab Study for Thimann Labs and Engineering Building

Upcoming Agenda for 2016-17

The committee will further explore the following topics further in 2016-17:

Building a Collaborative Research Community on Campus

Committee members discussed different approaches for faculty collaboration such workshops involving “one minute” research presentations, Faculty Initiated Group Hire (FIGH) themed events, along with grant writing workshops to encourage collaborative research on campus. The committee would also like to review Office of Research data such as PI submissions, success rates and grant re-submissions. In addition we would like to offer interest-based opportunities for faculty to collaborate on shared research goals. Ideally, this might be supported by a series of workshops throughout the year (two to three) starting in early November. These workshops might identify research themes that again might be supported in the SRG funding process by OR seed funding. COR would also like to facilitate collaboration between the Arts and Humanities Division to include specific foundation workshops, grant support, and increased access to research funds by ensuring that COR grants proposal have a faculty reviewer from the Arts Division.

Faculty Workload Policy

As part of efforts to provide more incentives to faculty for undertaking research, members would like to review campus workload policies. We want to explore possible incentives for faculty who mentor a large number of graduate students or who administer large numbers of grants. Each division on campus seems to have different practices in relation to course load. Furthermore, there are even differences within divisions.

Using Analytics for Faculty & Students

Chair Whittaker has been appointed the COR representative on the Academic & Research Analytics Steering Committee by the CPEVC. The administration would like to make greater use of the data collected on students and faculty. Committee members would like to continue to monitor this emerging area to ensure the information used is to promote equity and efficiency for faculty.

Support for Graduate Students

The committee is interested in exploring graduate student funding especially at the central level. Other higher education institutions are providing highly competitive multi-year offers with the result that our campus loses high quality graduate candidates. Members would like to better understand the “graduate student instructor” (GSI) model and if this might be used to alleviate

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financially stressed students. The committee would like to invite the Vice Provost & Dean of Graduate Divisions to discuss support for graduate students.

Finally, the Committee on Research would like to acknowledge all the hard work and wise counsel provided by our staff analysts, Kim Van Le, Matthew Mednick and Mary-Beth Harhen.

Respectfully Submitted;

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