

UC DAVIS  
OFFICE OF RESEARCH  
A VISION OF EXCELLENCE

# Report of the Research Recommendations Implementation Committee

DECEMBER 5, 2014

**UCDAVIS**

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## Table of Acronyms

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AAHRPP	Association for the Accreditation of Human Research Protection Programs
ARM	Administrative and Resource Management
AVC	Associate Vice Chancellor
BRAID	Biomedical Research Acceleration, Integration and Development
C4B	Center for Biophotonics
CA&ES	College of Agricultural and Environmental Sciences
CBS	College of Biological Sciences
CBST	Center for Biophotonic Science and Technology
CNL	Crocker Nuclear Lab
CNPRC	California National Primate Research Center
CoE	College of Engineering
COI	Conflict of Interest
CRM	Customer Relationship Management
CWR	Consortium for Women in Research
DEVAR	Development and Alumni Relations
DRIVE™	Distributed Research Incubation & Venture Engine
ETTC	Engineering Translational Technology Center
F&A	Facilities & Administrative
FFATA	Federal Funding Accountability and Transparency Act
HASTOC	Human Anatomical Specimen and Tissue Oversight Committee
IFHA	Interdisciplinary Frontiers in the Humanities and Arts
IP	Intellectual Property
IRB	Institutional Review Board
IRS	Interdisciplinary Research Support
IRSI	Interdisciplinary Research and Strategic Initiatives
JMIE	John Muir Institute of the Environment
LBNL	Lawrence Berkeley National Laboratory
LLNL	Lawrence Livermore National Laboratory
MNRC	McClellan Nuclear Research Center
MTA	Material Transfer Agreement
OCR	Office of Corporate Relations
OR	Office of Research
ORU	Organized Research Unit
OSTP	Office of Science and Technology Policy
PHS	Public Health Service
PI	Principal Investigator
QB3	Quantitative Biosciences
RCI	Research Compliance and Integrity
RISE	Research Investments in the Sciences and Engineering
RRIC	Research Recommendations Implementation Committee

## **Table of Acronyms (cont.)**

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SI	Strategic Initiatives
SoM	School of Medicine
SoN	School of Nursing
SPO	Sponsored Programs Office
SPARK	Sponsored Programs Administration and Research Kiosk
SRP	Special Research Programs
STAIR	Science Translation and Innovative Research
START	Smart Toolkit for Accelerated Research Translation
SVM	School of Veterinary Medicine
TMCR	Technology Management and Corporate Relations
VCR	Vice Chancellor for Research
VISTR™	Visiting International Scholar Training and Research
WAG	Washington Advisory Group
WFC	World Food Center

## Committee Membership

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Professor/Chair, Earth and Planetary Sciences  
Professor/Vice Chair, Entomology; Director, Center for Biosystems  
Professor, Surgery (School of Medicine); Director, Mouse Biology Program  
Professor, Neurology, and Neurobiology, Physiology and Behavior  
Past Chair, Academic Senate (FY 2013-14); Professor, Mathematics  
Associate Dean for Research and Graduate Education, School of Veterinary Medicine; Professor, Molecular Biosciences (SVM)  
Professor, Plant Pathology and the Genome Center  
Director, Institute of Transportation Studies; Professor, Civil Engineering, and Environmental Science and Policy

## Overview

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The Research Recommendations Implementation Committee (RRIC) was charged by Chancellor Linda P. B. Katehi in 2011 to advise the Vice Chancellor for Research on implementation strategies for the improvements recommended by five different reviews of sponsored research programs and technology transfer. These reviews were conducted by two Faculty Blue Ribbon Committees, the Washington Advisory Group and Huron Consulting Group, between May 2010 and May 2011.

The charge of the RRIC was to:

- Evaluate the impact, priority, feasibility, effectiveness, and criticality of the recommendations.
- Assess and advise on resources needed to execute the recommendations.
- Offer alternative options that may be more efficient or effective within the spirit of the proposed recommendations.
- Recommend deployment and communication strategies.
- Assess proposed action plans and measurements of success.
- Evaluate and report on the overall impact and effectiveness of the proposed recommendations.
- Identify barriers and approaches for mitigating them.

The RRIC has been instrumental in providing thoughtful advice, critical-path guidance and alternative strategies for the Office of Research (OR) to provide faculty the support necessary for research growth.

This report provides information about the activities of the OR since the creation of the RRIC and the arrival of Professor Harris Lewin as Vice Chancellor for Research in 2011. It includes a summary of the information listed above and describes implementation of the recommendations, deployment of resources for research infrastructure, provisions for seed grant programs, and strategic focus for future success. It further details remaining actions that are warranted given progress to date.

All new programs and initiatives described in this report were enabled by resources set aside by Chancellor Linda Katehi for the specific purpose of rejuvenating the OR, consistent with her Vision of Excellence, and with the ultimate objective of establishing UC Davis among the top five research universities in the country. Among the Chancellor's goals are to increase sponsored research activity to \$1 billion annually and for UC Davis to be among the best academic institutions in the nation in promoting innovation, entrepreneurship and economic development. This report summarizes many important steps taken by the OR during the past three years to enable UC Davis faculty and staff to realize these goals.

## Executive Summary

Between May 2010 and May 2011, five reviews were conducted to provide feedback and recommendations for improvement of the OR at UC Davis. The reviews included external peer and subject-matter-expert reviews by the Washington Advisory Group (WAG) and Huron Consulting Group, as well as internal faculty driven reviews by the Blue Ribbon Committees on Technology Transfer and Research.

The reports from these reviews generated a total of 372 recommendations, with 57% (211) of those directed at the OR. The report observations and recommendations were at times contradictory, or listed alternate strategies to resolve an identified challenge. Thus, with the expertise and advice of the RRIC, beginning in May 2011, the Vice Chancellor for Research (VCR) embarked on identifying which recommendations were implementable, achievable and preferable for the overall functioning and support of campus research. The Chancellor provided the necessary resources to meet the anticipated implementation goals, and significant progress has been made in successfully implementing the majority of the recommendations.

At the end of fiscal year 2013-2014, 70% of the recommendations have been completed, 19% are underway, 9% were not adopted or an alternate strategy was adopted, and 1% remain to be implemented (Table 1).

**Table 1: Status of Office of Research Recommendations**

Completed:	147	70%
In Progress:	41	19%
Alternate path:	20	9%
Future:	3	1%
<b>TOTAL:</b>	<b>211</b>	<b>100%</b>

The following table (Table 2) provides a summary of those reviews and the number of recommendations that fell within the purview of the OR. A detailed list of all recommendations is included as Appendix VII to this report.

**Table 2: Summary of Recommendations**

	Total No. Recommendations	No. for the Office of Research	% for the Office of Research
Washington Advisory Group	60	7	12%
UC Davis Blue Ribbon Committee on Technology Transfer and Commercialization	47	37	79%
UC Davis Blue Ribbon Committee on Research	128	62	48%
Huron Consulting Group - Review of InnovationAccess	22	22	100%
Huron Consulting Group - Assessment of Pre-Award and Post-Award Operations	115	83	72%
<b>TOTAL</b>	<b>372</b>	<b>211</b>	<b>57%</b>



This report covers the progress of implementing these recommendations, first by overall strategic initiatives then by specific units, and describes the process for achieving any remaining goals planned for fiscal years 2014 through 2016.

Major achievements that directly address recommendations include:

#### Administration and Compliance

- Reorganized the OR into three divisions: Administration and Compliance, Interdisciplinary Research and Strategic Initiatives (IRSI), and Technology Management and Corporate Relations (TMCR).
- Increased staffing levels across the OR units from 97 FTE in FY 10-11 to 123.8 FTE in FY 13-14 to bring staffing levels in line with workload and strategic objectives according to recommendations made by the external consultants.
- Streamlined operations in the Business Administration Office and created a cross-unit “Negotiation Team” to facilitate complex contract negotiations.
- Completely revamped the Institutional Review Board (IRB), dramatically improving service and turn-around times. The IRB is scheduled for an accreditation review in January 2015 by the Association for the Accreditation of Human Research Protection Programs (AAHRPP).
- Reconstituted a new Research Compliance and Integrity Unit and revitalized research compliance operations.
- Hired a Director of Marketing and Communications to promote activities of the OR to both internal and external audiences. Initial efforts include publishing an internal monthly newsletter, enhancing the OR website and developing a social media strategy.

#### Interdisciplinary Research and Strategic Initiatives

- Launched the Interdisciplinary Frontiers Program, a \$14.5 million grand challenges initiative that galvanized the research community across schools and colleges.
- Established BGI@UC Davis, a partnership with the world’s largest DNA genomics company that brought a \$5 million investment in instrumentation and 15 technical staff to the Sacramento campus.
- Created the Research Unit Development group to support the activities and timely reviews of the Organized Research Units (ORUs), Special Research Programs (SRPs), and Research Facilities.
- Initiated reviews for all 10 ORUs managed by the OR in FY 12-13, with five completed and moving through administrative review.
- Expanded the Interdisciplinary Research Support (IRS) group to provide greater support for large-scale faculty-led research initiatives. More than \$45 million in new awards were generated by proposal support from the IRS in FY 12-13.
- Established the Coastal and Marine Sciences Institute, which involves more than 60 faculty from several colleges and schools.
- Recast the relationship with Lawrence Livermore National Laboratory (LLNL) including four 3-year graduate fellowships established with funds from LLNL, Office of the President, and the OR.

- Established a successful strategic partnership with the Exploratorium in San Francisco to strengthen the campus's scientific footprint in the Bay Area.
- Developed a comprehensive plan to improve efficiency and service provided by campus research core facilities. This plan is being implemented in FY 14-15.

#### Technology Management and Corporate Relations

- Created and implemented a campus-wide vision for technology transfer, entrepreneurship and innovation with the Child Family Institute for Innovation and Entrepreneurship and the Graduate School of Management.
- Launched Venture Catalyst, a new unit within TMCR that provides support to researchers interested in creating start-up companies based on university-derived intellectual property.
- Launched the Science Translation and Innovative Research (STAIR) grant program to provide proof-of-concept funding to support translational research.
- Collaborated with the Development and Alumni Relations (DEVAR) office to develop and implement a strategy that targets 43 companies as top prospects for research partnerships.
- Launched a KNODE™ researcher portal to connect faculty with potential external research sponsors.
- Completed plans for development of the Distributed Research Incubation and Venture Engine (DRIVE™) network for supporting local start-ups.

The final section of the report (Looking Forward, FY 14-16) describes recent initiatives and implementation plans for programs that will further enhance the OR's services to faculty and staff.

## **Recommended Actions for Office of Research Executive Leadership**

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This section discusses actions taken in response to recommendations related to the overall mission and vision for the OR as well as its overall infrastructure, reporting lines and campus-wide system solutions. Later sections of this report will provide information about progress to date within individual OR units.

### Mission and Vision

Both internal and external reviews identified the need for the OR to align its mission, vision and goals with an overall five- to ten-year strategic plan for the university as a whole. The five formal reviews also encouraged the OR to emphasize a culture of faculty service, support of science and risk mitigation instead of risk adversity in its mission, vision and value statements. In response, the OR revised both its vision and mission statements as follows:

**Vision:** To enable UC Davis to be a global leader in research and technology transfer.

**Mission:** The Office of Research is the catalyst for advancing the research mission at UC Davis.

The OR strives to achieve its mission and vision through the following organizational goals:

- Provide service and resources to faculty, students and staff that stimulate research and other creative endeavors;
- Facilitate and enhance partnerships and collaborations between faculty, government, foundations, industry and global research enterprises;
- Develop infrastructure and policy that promote creativity and an entrepreneurial culture;
- Ensure that policies and educational programs advance both a culture of innovation and compliance on the UC Davis campus;
- Foster a diverse and inclusive work environment that respects the UC Davis Principles of Community and encourages work/life balance for all staff; and
- Communicate the value and impacts of UC Davis research to the world.

In addition to adopting the overall vision and mission, each unit within the OR also developed unit specific mission statements in alignment with the overall mission, vision and goals of the OR.

### **Structural Reorganization**

A key recommendation in the Chancellor's Blue Ribbon Committee on Research final report was that the OR "reorganize and re-staff... to ensure a culture that establishes service to faculty as the top priority and emphasizes appropriate mitigation, rather than elimination, of compliance risks."

To better serve the newly established mission, vision and goals, the OR was restructured by VCR Lewin into three divisions designed to develop and enhance its three primary functions: TMCR, IRSI, and Research Administration and Compliance. *See Appendix I: Current OR Organizational Chart.* The Vice Chancellor recruited a new leadership team to support the new three-prong administrative structure and to move the recommendations of the review committees forward. These recruitments included: Cindy Kiel, Executive Associate Vice Chancellor (EAVC) for Research Administration; Dushyant Pathak, Associate Vice Chancellor (AVC) of TMCR; and Paul Dodd, AVC of IRSI.

### **Systems, Transparency, and Communications**

In addition to the high-level restructuring mentioned above, the OR made significant progress addressing specific overall observations from the committee reviews. These key observations and recommendations, along with a summary of the OR's responses, are itemized below:

Remove administrative barriers and increase transparency. The OR is in the process of implementing various programs to increase the quality and quantity of its communications and is also developing a marketing and communication strategic plan. Over the last year, the OR leadership team has established electronic systems, with input from the schools and colleges, such as a new sponsored research awards database software solution that, once launched, will allow faculty, department administrators and campus-wide leadership to see the same data that the Sponsored Programs Office (SPO) staff are able to see in real-time via a web-based platform. More specific examples are provided below.

- 1) To address issues of transparency, the Business Administration Office reorganized to realign and improve core work processes, streamline operations, increase efficiency, and improve

quality and performance. The OR created a database to track use of campus research-support funds, manage commitments against the funds, retain historical data, and improve reporting and analysis. The OR and campus match fund policies (Equipment Match, Cost Sharing, PI Bridge program, Publication Assistance Funds, Multidisciplinary Proposal Support & Basic Research Grants program) are being revised to meet current realities. The OR is working with the Administrative Coordinating Council of Deans to finalize a new funding model for institutional matches that involve three or more UC Davis administrative units.

- 2) Communication improvements included publishing funding opportunities on the OR website and sharing these opportunities through a weekly research funding update. A monthly internal newsletter keeps staff apprised of overall OR activities, and there are future plans to release a quarterly newsletter called "Research Matters" to highlight key research and scholarship and report extramural funding. The OR website was redesigned then updated in 2014 to improve the overall usability and provide PIs tools such as checklists and information regarding proposal and award processes.
- 3) A campus-wide committee was established to develop a new model for the administration and support of the currently decentralized campus core facilities. The final report of recommendations by this committee was submitted to VCR Lewin in February 2014. In consultation with the campus administration, deans, Academic Senate, and report authorship group, the VCR is moving forward with implementation plans.

Build upon disciplinary excellence to enhance interdisciplinary collaboration. A significant structural change in the OR was enacted by integrating interdisciplinary research support and assessment functions with research development activities under the guidance of an AVC. The formation of the IRSI division has involved the expansion of an existing campus unit, IRS, which is focused on complex proposal development and administration of the campus Limited Submission program, and the establishment of two new groups, Research Unit Development and Strategic Initiatives (SI).

- 1) The IRS team has been expanded in line with strong recommendations in both the Blue Ribbon and Huron reports in order to increase the volume of large-scale interdisciplinary application submissions. Additional information about progress is included in more depth in a later section of this report.
- 2) The Research Unit Development group was formed by hiring two new staff and redeploying one existing OR employee. The group's mandate is to support existing research units administered from the OR, which includes ten ORUs, seven SRPs, and five campus core facilities.
- 3) The SI group provides research development leadership and support, including supporting the development of new interdisciplinary research directions across campus through seed funding programs such as the Research Investments in the Sciences and Engineering (RISE) and Interdisciplinary Frontiers in the Humanities and Arts (IFHA) initiatives.

Improve researchers' competitiveness for partnerships with industry, foundations and international organizations. Significant progress has been made to support faculty engagement and competitiveness, which has become more critical over time as traditional funding opportunities for research support have diminished over the last few years. For example, the OR has accomplished the following action items:

- 1) The Office of Corporate Relations (OCR) was moved into the newly formed TMCR division in order to connect faculty with potential partners in a manner designed to more strategically align the unique strengths of our campus with industry needs.
- 2) A negotiation team was formed with participants from SPO, OCR, Development, InnovationAccess, Business Contracts and the School of Medicine contracts office, to streamline industry negotiations regardless of the type of agreement requested.
- 3) New resources for international negotiations were added to the OR team this fiscal year with the hiring of a new International Specialist, Carl Reed. UC Davis faculty are becoming more proactive in identifying opportunities with international entities for collaborative research. As a result, the OR is developing improved systems to facilitate multinational relationships, including bringing international funders to campus (e.g., European Union, UK Science and Technology agency, German National Science Foundation). The OR is also leading the organization of faculty research engagements through workshops in Madrid, Spain, and São Paulo, Brazil, as well as leading the development of research partnerships with institutions in China, Chile, Kenya, Ireland, Taiwan and Dubai.
- 4) A key initiative launched by the OR to improve researcher competitiveness is a collaboration with BGI, the world's leading provider of next generation genome sequencing services. The collaboration, BGI@UC Davis, has the potential to fulfil the promise of the genomics revolution by marrying high throughput sequencing with big-data analysis capabilities and international research collaboration at the student and faculty levels. BGI@UC Davis is led by faculty Director Bart Weimer through a funded position within the OCR, with operations managed by a newly appointed Associate Director, Joshua Wood, hired in FY 13-14.

Develop a new unit within the organization to smooth the process of creating new companies and provide links to business. Venture Catalyst was created to provide support to campus researchers interested in creating start-up companies that commercialize university-derived intellectual property. The decision was made to structure Venture Catalyst as a stand-alone unit within the TMCR division since its focus is complementary to that of InnovationAccess and OCR.

Institute policies on campus that support research infrastructure and cover departmental expenses associated with acquiring research funding that will, in turn, generate new indirect cost returns for the university. In addition to system releases anticipated in FY 14-15, the OR has, in response to input from faculty and the RRIC, implemented a number of policy revisions to enable greater productivity. The OR has been actively engaged in modifying policy in order to support faculty research, including the streamlining of human subject protection, softening the impact of Facilities & Administrative (F&A) increases on certain grants, and allowing more flexibility in

annual carry-forward for research core facilities from 8% to 15%. Additional policy discussions at the Office of the President include adoption of the new federal Uniform Guidance, providing more clarity on campus for F&A waivers, acceptance of certain contract and grant terms and support for international endeavors.

### **Staffing Levels within the Office of Research**

Based on campus and external reviews, Chancellor Katehi invested in resources and infrastructure to support the rapid growth of sponsored research with the goal of achieving annual research funding of \$1 billion, and enabling faculty to meet the strategic research goals set out in the University's Vision of Excellence. The Huron Consultant Group reports, in particular, identified a situation of significant under-staffing in research administration support relative to UC Davis' peers.

Despite a severe UC system-wide budget situation in 2011 that required fiscal constraint, and budget cuts, the OR remedied its staffing situation by reducing management level positions, which allowed for additional analyst positions identified as critical support necessary for research infrastructure. Thus, in spite of the conservative financial situation, under OR's executive leadership, staffing was increased from 97 FTE on April 8, 2010, to its current level of 123.8 FTE. *See Appendix II: OR Staffing Levels.*

The focus for new hires was to identify talented individuals with a commitment to serving the research mission of the university and supporting faculty success in sponsored research, technology development and research compliance. Specific recommendations to enhance resources for the IRS proposal development team and staff levels in SPO and InnovationAccess to alleviate extreme workloads were addressed immediately.

In addition to the positions Huron recommended, turnover in personnel, combined with earlier budget reductions, had left the human subject protection program and research compliance areas significantly understaffed and/or non-existent, resulting in significant turnaround times for protocols, Conflict of Interest (COI), and other committee reviews. Adding key personnel to these areas has resulted in significant improvements to faculty service and turn-around times, allowing important research to move forward. The WAG and Blue Ribbon reports also identified that oversight and overdue reviews of the ORUs and Specialized Research Programs needed remedy. Adding key personnel in these areas has allowed these reviews to move forward.

The OR also conducted a staff-wide review of position descriptions to ensure that all staff members were appropriately classed for the work being required of them. Additional service improvements were made to all divisions of the OR and are detailed in the following section.



## **Recommended Actions by OR Service Units**

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### **Sponsored Programs Office**

The SPO has been through significant transitions over the last three years in the areas of staff, structure and systems. Reorganizations within this unit began with the development of their unit mission to “assist the campus research community in its efforts to secure extramural funding while promoting proper stewardship of those funds.”

Key areas of concern for SPO identified by the external Huron reviews included staff feeling overwhelmed and overworked, as well as customers feeling that SPO needed to create primary SPO points of contact for members of the research community by aligning staff assignments to specific colleges and departments. The recommendations included reorganizing the teams in this manner as well as adding seven positions to SPO to bring workload averages in proposals and awards into alignment with workload assigned to their counterparts at peer institutions.

Based on the formal reviews as well as on-going feedback from campus constituents, SPO has addressed recommendations in multiple ways. The campus invested in seven additional FTEs, completed business process mapping to remove non-mandatory process steps, and implemented signature authority streamlining and delegation mechanisms. Accountability and transparency were increased using an interim electronic system for grant and contract tracking and reporting that included a notification system to provide status updates and information requests to PIs and administrative staff. The next step is the rollout of the Sponsored Programs Administration and Research Kiosk (SPARK) award and proposal development modules, powered by Kuali Coeus, to allow for web-based access to status, documents, data and reports. This will enable campus more-immediate access to the same system SPO will use for proposal and grants management. The new award management system will also be able to integrate with the Kuali Financial System (KFS) to reduce redundant data entry between SPO and Extramural Accounting in the future.

In response to the Blue Ribbon Committee reports, SPO has also increased the number and locations of its certification training program for Departmental Administrators across campus.

#### **Structural changes within SPO included three primary measures:**

- 1) To provide greater expertise and focus for complex awards that require guidance from multiple offices, SPO established a “Negotiation Team.” The team has achieved high efficiency in completion of review/negotiation/approval of certain agreements, evidenced by a reduction in turnaround time (mostly with private sector funders). The Negotiation Team comprises a core set of individuals within SPO as well as individuals from InnovationAccess, to quickly handle intellectual property and material transfer terms embedded in complex sponsored research agreements; OCR to shepherd industry partner interactions, monitor process and progress and coordinate with other pre-existing or parallel discussions with individual partners; the Development office, to enable strategic relationship building where philanthropy plays a role; and the Business Contracts and School of Medicine contracts offices, to avoid internal jurisdictional issues and delays associated with different types of contract actions. Most

recently, the international specialist in the OR joined this team in order to provide timely and effective guidance and support for international grant and contract agreements.

Since the team's inception, in April 2012, over 600 such agreements have been successfully negotiated, including research non-disclosure agreements, research agreements, and agreement modifications.

- 2) A second area of concern for many faculty and departmental staff was the long turn-around time for preparation and completion of subaward agreements, which enable research collaborations. Additional concerns were raised in the university's annual audits related to consistency in Federal Funding Accountability and Transparency Act (FFATA) reporting. In response to these concerns, SPO created a new Subaward Response unit in January 2014, with existing resources and contract staff. New streamlined processes were identified at the same time in order to enhance turnaround times and expertise in subaward creation and subrecipient monitoring — including FFATA reporting to the federal government.
- 3) In May 2014, SPO was reorganized as recommended by campus and Huron reviews after experiencing significant turnover in staff through FY 2013-14. Restructuring resulted in the assignment of dedicated proposal and award analyst support to colleges and their departments for proposal and award processing. Aligning analysts with specific colleges allows staff to develop expertise relevant to the colleges and departments they serve and supports enhanced relationship building and outreach campus-wide. This approach has the added benefit of allowing faculty and departmental staff to know, in advance of deadlines, who they can contact for advice and support on proposals, award processes and content. Since May 2014, there has been a significant increase in positive feedback from campus investigators and leadership and a recognizable decline in negative feedback — both signs that the restructuring is already proving effective.

#### SPO Customer Satisfaction Survey

When SPO completes the submission of a proposal or the process of accepting an award, the Principal Investigator (PI) and his/her department administrative contact are sent an electronic survey about their experience. Since FY 09-10, a standard SPO customer satisfaction survey has shown generally improved results as summarized in Figure 1.

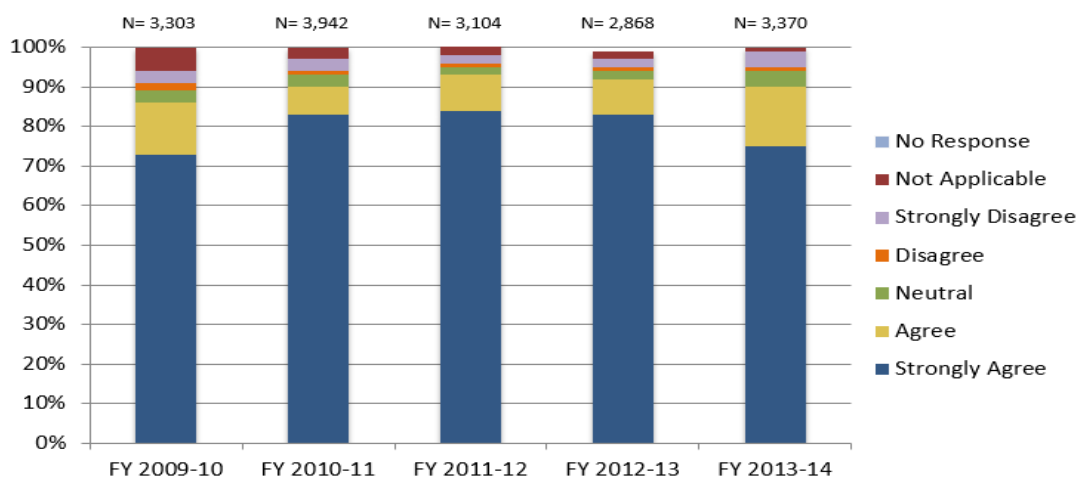
Respondents to the survey are asked to select a response to the first four questions from the following options: *Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree / Not Applicable / No response*.

1. Was the proposal/award processed in a timely manner?
2. Was the SPO staff member effective in addressing any issues that arose?
3. Did the SPO staff member treat you with courtesy and respect?
4. Was the SPO staff member knowledgeable and helpful?

Respondents are also given the opportunity to provide written responses regarding their overall experience with SPO and any specific areas that could use improvement. Answers to these questions have been utilized to create better processes, policies and customer service to the campus community.



Figure 1: SPO Customer Satisfaction Survey Results



Note: Percentages shown are the totals for each category summed for all four questions and divided by the total number of responses for all questions.

## Institutional Review Board Administration

Due to historical under-resourcing of staff, retirements and turnover of key personnel in FY 11-12, combined with a legacy of hundreds of pages of policies and procedures accumulated over years at the IRB, turnaround times for protocol triage and review had reached unacceptable levels. The time was right for a complete overhaul of IRB staff assignments, policies, forms, systems and guidance documents. Though the IRB was not included in the initial Huron reviews, primary recommendations from the Blue Ribbon Committees on campus included: a) identifying technology solutions to streamline and expedite operations by moving from paper to electronic forms; b) launching in-depth operational reviews to address persistent concerns; and c) mitigating perception issues such as processing time/backlogs, seeking to manage risk to zero, adequacy of skill level in program staff, suitability of technological resources, and level of commitment by program staff to faculty research success.

Because of significant staff vacancies, the OR engaged Huron Consulting Group in 2012 to provide both staff support and policy/process streamlining support while searches to hire a Director, Associate Director, and five analysts were underway. At the same time, the IRB office was undergoing electronic system selection and development. Staff efforts, strong consulting work and application of appropriate resources have made a tremendous transition at the IRB. As of September 2013, the IRB filled all open staff vacancies, with Dan Redline as Director and Cindy Gates as Associate Director. Based on current metrics, the IRB has become one of the best human protection programs in the UC System. Standard operating procedures were reduced from over 400 pages to below 70 pages; new forms and checklists were adopted to focus protocol preparers and reviewers on the regulatory requirements necessary for a compliant program while simultaneously speeding up the review process. New policies, enabling staff review of exempt and expedited protocols, were adopted and a fourth fast-track IRB committee was established to respond rapidly to time-sensitive protocols and reportable new information on existing protocols. An education/training program was also implemented, along with an Investigators' Manual, to keep campus constituents abreast of the significant changes and to ensure compliance with human subject protection.

Additional changes at the IRB to improve efficiency and compliance include:

- 1) Assessment of reporting criteria for approval processing and turnaround times and participation in UC BRAID system-wide initiatives on metrics;
- 2) Modification of IRB member composition to allow for easier formation of quorums;
- 3) Replacement of antiquated tracking systems to ensure that requirements to maintain records are met;
- 4) Reduced administrative burden with a revised IRB application that better addresses regulatory concerns and minimizes ambiguity in material submitted for review, and extends the requirement for exempt reviews to three years;
- 5) New template consent forms, which have been well received by researchers, eliminate version dates when renewals do not result in any consent form modifications;
- 6) A streamlined billing process for IRB review, which has had the effect of doubling billing receivables to cover IRB costs;
- 7) Establishment of best practices to address compliance weaknesses and sharing these with academic peers via service on national committees;
- 8) Improved website usability, content and tools: IRB metrics are posted on the website for additional transparency; eDocs routing of submissions is improved; Collaborative Institutional Training Initiative is now offered, which allows researchers who collaborate with other institutions to use a single universal online training for human research protections;
- 9) Adoption of a culture that promotes interactions between reviewers and faculty in advance of IRB committee meetings in order to avoid delays caused by deferrals and/or misconceptions. IRB staff facilitates this outreach when IRB reviewers wish to remain anonymous; and
- 10) Multiple new Memoranda of Understanding (MOUs) allow for reliance activities to reduce redundant IRB committee reviews. These MOUs include but are not limited to the UC System wide Reliance Registry, National Cancer Institute, other universities and commercial IRBs.

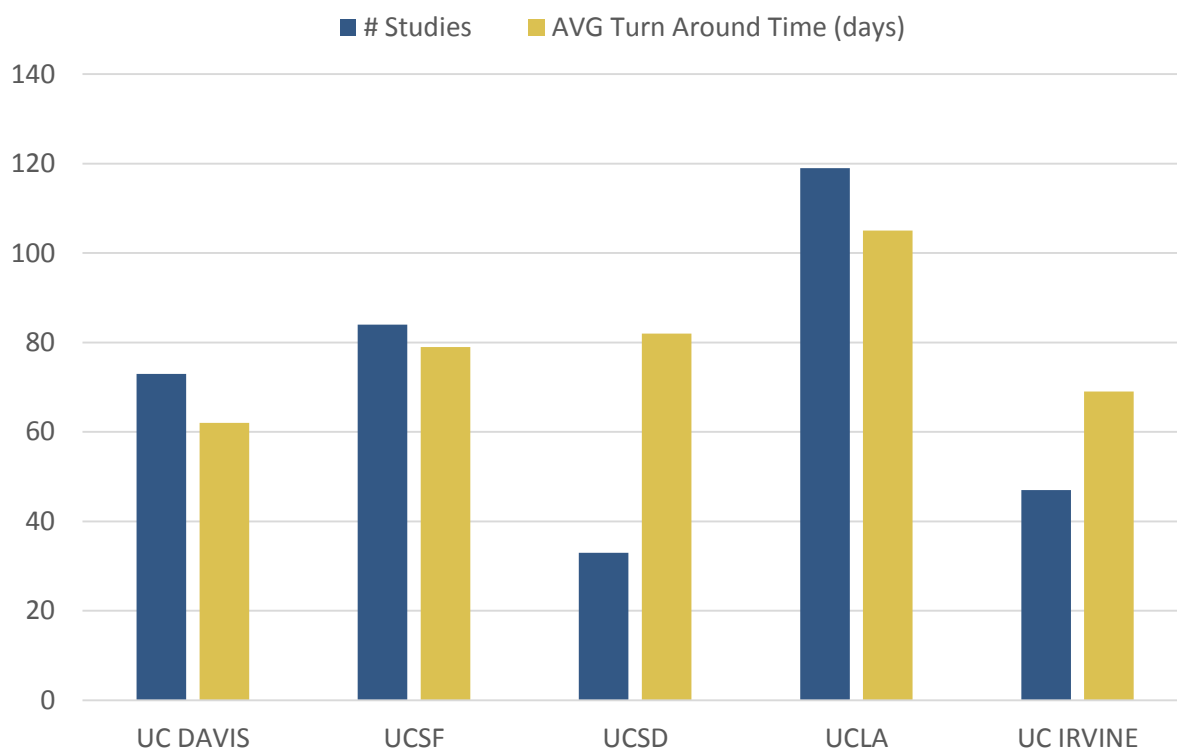
The results of the extraordinary efforts by staff at the IRB has resulted in significant improvements to faculty support, human subjects protection, clarity of regulatory requirements and decreases in turnaround times. Additionally, the IRB is pursuing accreditation by the AAHRPP, with a site visit likely to occur in the spring of 2015. Turnaround time metrics showing improvements over time are represented in Table 3 and Figure 2.

**Table 3: Performance Metrics of the Institutional Review Board for All Submission Types**

REPORTING PERIOD	FY 2011-12	FY 2012-13	FY 2013-14
Number of submissions	5,954	>5,624*	>6,207*
Average turnaround time for intake	6 weeks	3 days	1 day
Average turnaround time for initial review of new minimal risk projects	8 weeks	26 days	12 days
Average PI turnaround time for response to review of new minimal risk project	2 weeks	2 weeks	2 weeks
Average total turnaround time for approval of new minimal risk project	10 weeks	40 days	26 days
Average turnaround time for initial full committee review of new project	6 – 8 weeks	30 days	16 days
Average turnaround time for initial review of minimal risk modifications	Unavailable – new metric	7 days	7 days
Average PI turnaround time for response to non-committee review of modifications	Unavailable – new metric	2 days	2 days

\*Does not include responses to non-committee reviews

**Figure 2: Average Turn-Around Time & Number of Studies for Initial Review of Clinical Trials\***



\*Source: UC BRAID data from the Research Electronic Data Capture web application system for January 1, 2014 through September 1, 2014.

Future System Adoptions

The IRB will be rolling out the IRBNet software solution to campus in early 2015. This is designed as an interim technology solution until the Kuali Coeus IRB module has matured to the point that it can be integrated with SPO, financial systems and other compliance modules.

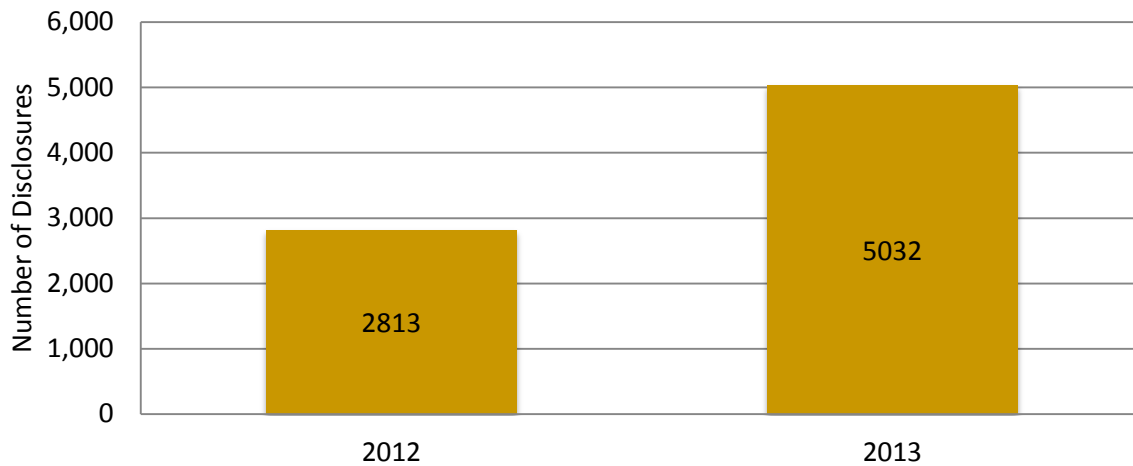
**Research Compliance and Integrity**

Research Compliance and Integrity (RCI) reached critically low staffing levels in 2011 due to ongoing budget reductions in the state of California and relocation of the director, who had been overseeing the IRB and all other research compliance areas. Thus, in 2011, the unit consisted of only one (1) FTE analyst to handle COI Compliance, Stem Cell Research Committees, Responsible Conduct of Research Education, Committee on Research Integrity, Export Controls and the Human Anatomical Specimen Committee. Although Institutional policies allocated research misconduct investigations to the OR, this function had been moved to the Provost's office and to Health System staff due to staffing levels in the OR. Also, other than an overall statement from the Blue Ribbon Committee that OR reorganize and re-staff to prioritize service to faculty and mitigation — rather than elimination — of compliance risks, a specific review of the situation in research compliance had not occurred. This became a top priority for the new OR leadership team to ensure the responsible and ethical conduct of research at UC Davis as well as to enable the university to be responsive to new and changing federal regulations such as the Public Health Service (PHS) COI Regulation change in 2012.

Thus, resources for a director and three analysts were allocated and the positions filled by 2013. Craig Allison was identified as the new lead for the Research Compliance team. In this process, the OR reclaimed Research Misconduct Investigation responsibility from the Office of the Provost and the Health System and, as part of the overall restructuring in the OR, pulled the Human Subjects Quality Assurance position from inside the IRB office to a more neutral location in RCI. Since inception, the new office has realized several achievements, including the following:

- 1) **Research Guide:** RCI teamed up with Administrative and Resource Management (ARM) to finalize and release a Compliance Guide for faculty and have increased their outreach to the campus community in collaboration with the chief compliance officer at the Office of the Provost. The guide is posted online for easy access.
- 2) **Stem Cell System:** RCI and IT worked together to create a Stem Cell Research protocol notification system to ensure timely renewals of Stem Cell protocols.
- 3) **Conflict of Interest:** In response to the federally mandated PHS COI regulations, effective August 2012, RCI worked with IT to develop an online submission system for COI to handle the significant increase in COI Disclosures and reporting mechanisms (Figure 3). This custom built solution has served the campus well, but staff are engaged in campus-wide discussions to further streamline faculty reporting requirements. Eventually, an integrated approach to systems via the SPARK solution powered by Kuali Coeus will be utilized for sponsored research related COI reporting and management.

**Figure 3: Financial Conflict of Interest: Growth of Total Number of Disclosures\***

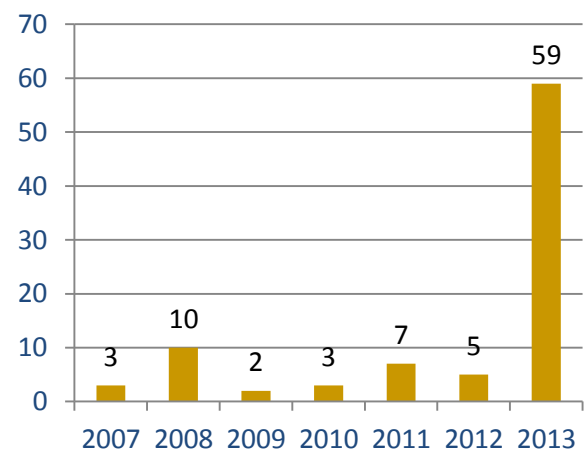


\* Amounts are for full calendar years. There is no data for 2011 & previous years due to lack of resources & no database. Disclosures include [1] 700-U (California form for research funding from non-governmental sponsors), [2] PHS COI (Federal form for PHS-funded research), and [3] Form 800 (form for federal, non-PHS research (e.g., NSF, DOD, USDA)).

- 4) **Human Subjects QA/QC reviews:** Hiring of a new QA reviewer resulted in substantial increases in proactive clinical trial program reviews with the primary purpose of educating research teams on responsible human subject protection programs (Figure 4).

- 5) **Research Compliance Committee:** RCI engaged in the campus-wide compliance initiative and formed the Research Compliance Committee to coordinate investigations and audits to avoid redundant faculty reviews. Significant interactions with UCOP policy staff have further enhanced UC Davis' compliance program.

**Figure 4: Human Subject Study Review/Audits**



- 6) **Export Control Compliance:** International Research continues to increase among UC Davis researchers. Along with this global expansion comes global responsibilities. Export Control regulation concerns can arise in a variety of ways (travel, shipping, hiring of foreign nationals, visiting scholars, sponsored research agreements, material transfer agreements, etc.), thus a global campus response is necessary. The RCI office has formulated the beginnings of a campus-wide compliance program for Export Controls and has conducted multiple reviews of export control situations to ensure compliance with these federal regulations.
- 7) **Boating Safety:** Because primary experts in boating and diving safety are embedded within the Bodega Marine Laboratory, an interdisciplinary research unit within the OR, boating and diving safety are handled within the research compliance constructs in the OR. In 2013, a new boating safety policy was created to ensure safe operation of motorized vessels.

- 8) **Human Anatomical Specimens:** The Human Anatomical Specimen and Tissue Oversight Committee (HASTOC) is co-chaired by the OR and the School of Medicine. Over the last year, the committee has worked on modifications to HASTOC policy to enhance oversight in this ethics area and to provide better clarity to faculty regarding expectations and best practices.

Future goals for RCI include a comprehensive review of research compliance by an external peer-review panel from the National Council of University Research Administrators in the Fall of 2014, and continued work on a comprehensive solution to the multiple Conflict of Commitment and COI reporting mechanisms across the UC Davis campus and the UC System.

## **Technology Management & Corporate Relations**

Technology transfer at UC Davis began in 1999, and has evolved considerably since then, both in its structure within the university administration as well as in the breadth and the proactive nature of its activities. One of the key observations of the WAG report was that “technology transfer and business development in the organization requires a broader view of its responsibility and a new strategy, direction and experienced staff.” This theme was echoed in the Blue Ribbon Report on Research with the recommendation that the VCR expand the notion of technology transfer to include knowledge transfer. In response to these observations and recommendations, VCR Lewin reorganized industry and technology initiatives into the TMCR division. The reorganization was solidified in 2012 with the hiring of AVC Dushyant Pathak.

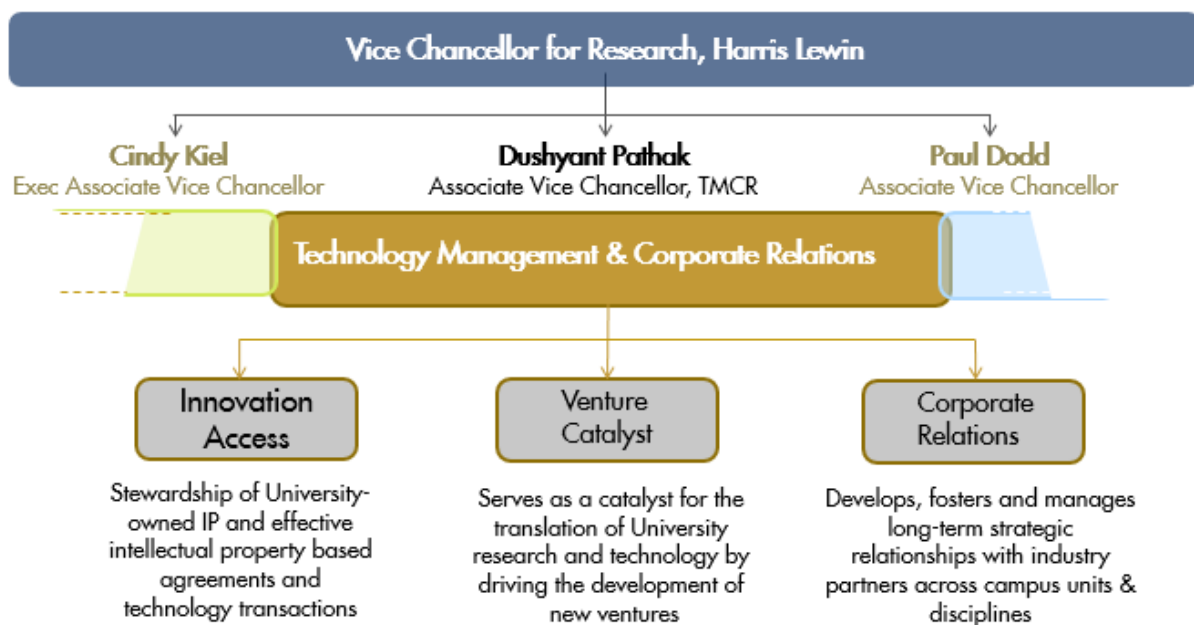
Newly developed goals and principles adopted by TMCR reflect the directions suggested by the external and internal reviews. TMCR’s purpose at UC Davis is to help transform today’s research and development into tomorrow’s successful businesses, ensuring that nascent technologies emerging from campus research will be the seed for tomorrow’s successful products, services and economic development. The success of TMCR is based on the close working relationships of its staff with faculty and personnel within academic and administrative units across the campus, as well as its effective engagement with the local economic community including government, business and not-for-profit organizations. The TMCR division works closely with the Office of the President and collaborates and coordinates closely with the other UC campuses so as to share knowledge and best practices.

The TMCR division takes a comprehensive approach to technology transfer based on the following principles:

1. Technology transfer is a subset of the broader university mandate of knowledge transfer;
2. To be most effective, technology transfer should be accompanied by post-transactional follow-up and engagement to enable successful development of commercial products and services; and
3. Leveraging the university’s diverse resources and assets, including those that are community-based, will result in positive impact on the university, commercial enterprise and the region.

The TMCR division achieves its objectives through three closely collaborative units (Figure 5): InnovationAccess, OCR and Venture Catalyst. The purpose and progress of each of these units towards accomplishing the recommendations set out by the RRIC are provided in more detail in the following pages.

Figure 5: TMCR Structure



## InnovationAccess

InnovationAccess is the traditional intellectual property office, providing services that connect university research to the marketplace through the efficient stewardship of university intellectual property and the effective negotiation of transactions, with both established companies and start-ups, to facilitate successful technology commercialization. InnovationAccess is responsible for all patenting, copyrighting and related intellectual property matters on campus as well as materials transfer agreements, licensing agreements and complex collaboration agreements, which may include multiple transactional, licensing and sponsored research modules that involve the potential generation of intellectual property. The InnovationAccess team comprises professionals with advanced degrees, including PhDs, JDs, and MBAs, many of whom have substantial past private sector experience.

Financially constrained times in California led to budget cuts within InnovationAccess, bringing it from a high of 29 FTEs in 2007 to 19.5 in 2010. The Huron review recognized that the reduction in staffing, in combination with a simultaneous increase of nearly 40% in research expenditures, resulted in unmanageable workloads, longer turnaround times and reduced services for faculty and staff. In spite of the drop in staff, performance expectations for the management and tracking of new invention disclosures, Material Transfer Agreements (MTAs), license-related agreements, and continued transfer of patent files from UCOP only increased, all while campus leadership promoted an enhanced focus on technology transfer. Thus, the key recommendations from external reviews included provisions for hiring three new Intellectual Property (IP) Officers, three IP Analysts, and an Administrative Assistant to InnovationAccess to support the existing research base at UC Davis.

In response to these recommendations, the OR has filled the above positions, and hired an Administrative Support Analyst in place of the Administrative Assistant. Key areas of improvement include a reorganized MTA team, and simplified, shortened, and online agreement templates for MTAs, Record of Invention, Licenses, and Invention Releases.

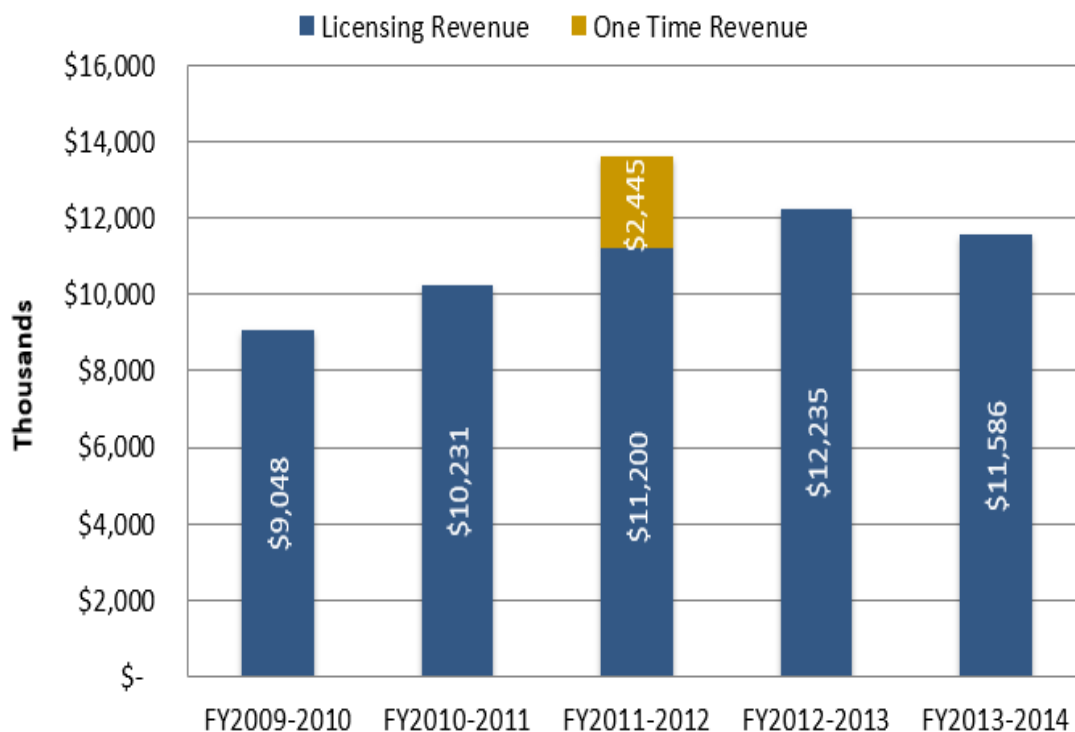


The unit also revised and published its mission statement as follows:

UC Davis InnovationAccess is a catalyst for the creation of partnerships that advance, for public benefit, the dissemination, utilization, and commercialization of discoveries made in research at UC Davis. InnovationAccess achieves its mission by working in close collaboration with UC Davis researchers to identify and protect discoveries that have value for commercialization, or that may be the foundation for further research and development partnerships. It enables partnerships that facilitate the development of UC Davis discoveries through new businesses created by entrepreneurs or through existing businesses.

The unit has enhanced technology transfer services on campus by providing decision trees, and by implementing new customer service oriented metrics to track and improve follow-up and yield better IP processing timelines. The Huron report recommended specific nomenclature for intellectual property that was adopted by InnovationAccess and the team continues to work closely with the Office of the President's Research Policy Analysis and Coordination unit on granting exception to policies that are needed for efficient technology transfer and to meet the evolving needs of industry partners. Additionally, one IP Officer is a member of the cross-functional Negotiation Team for sponsored research agreements to expedite negotiations, coordinate information and resolve complex intellectual property, material transfer and other terms embedded within research agreements.

**Figure 6: Gross Licensing Revenue**





Increased resources and improved processes have already shown improvements in metrics for InnovationAccess. In FY 13-14 the office filed 153 U.S. patent applications, completed 48 license agreements, 33 options and letters of intent, and 229 invention disclosures. In the period from FY 10-11 to FY 13-14, licensing revenues have shown a strong increasing trend (Figure 6).

In addition to the improved metrics provided above, InnovationAccess has achieved the following:

- 1) Successfully deployed an extern program for undergraduate and graduate students.
- 2) Implemented (with OCR) KNODE™, a web-based, knowledge-expert portal for UC Davis biomedical research. This will facilitate more effective identification of and visibility for thought and research leadership within UC Davis.
- 3) InnovationAccess, jointly with OCR and the new Venture Catalyst unit, is collaborating with the Engineering Translational Technology Center (ETTC) and the Child Family Institute for Innovation and Entrepreneurship to promote faculty entrepreneurship and increase the number of faculty-led start-up companies with 14 UC Davis start-up companies launched in FY 13-14, a record for UC Davis. (Note: Additional information regarding start-up companies is included in the Venture Catalyst section below).
- 4) In 2012, UC Davis InnovationAccess became an affiliate partner with a venture capital fund, Osage University Partners. Osage has a unique investment model that can directly benefit UC Davis as well as UC Davis start-ups that have met certain investment criteria. Osage invests exclusively in university start-ups at all stages, from seed to later equity rounds, through the exercise of the university's participation rights in patent license agreements. The arrangement with Osage also allows the university the option of participating in the purchase of equity alongside Osage. Investments by Osage average \$5-6M and cover a broad range of technology-based companies. As an affiliate partner, the university will receive a portion of the proceeds generated from the later sale of stock by Osage.
- 5) InnovationAccess is collaborating closely with IRSI in facilitating commercial interactions and translational assessments and enhancements for the RISE program teams.
- 6) InnovationAccess conducts regular customer service surveys with campus stakeholders to monitor performance related to IP transactions.
- 7) InnovationAccess is building the capability to track customer service metrics. This capability will be further enabled with deployment of the Salesforce Customer Relationship Management (CRM). A more detailed description of the metrics that will be captured is provided in Appendix IV.

Future goals for InnovationAccess include: (1) participation with OCR on the deployment of the Salesforce Customer Relationship Management and Workflow system; (2) updates to website content to allow easier access to forms, sample agreements, and technologies available for licensing; and (3) continued development of new programs, in collaboration with Venture Catalyst, to encourage

university start-ups, technology translation, simpler and more-attractive licensing of intellectual property to start-ups, as well as new programs for incubator access and proof of concept grants.

## **Venture Catalyst**

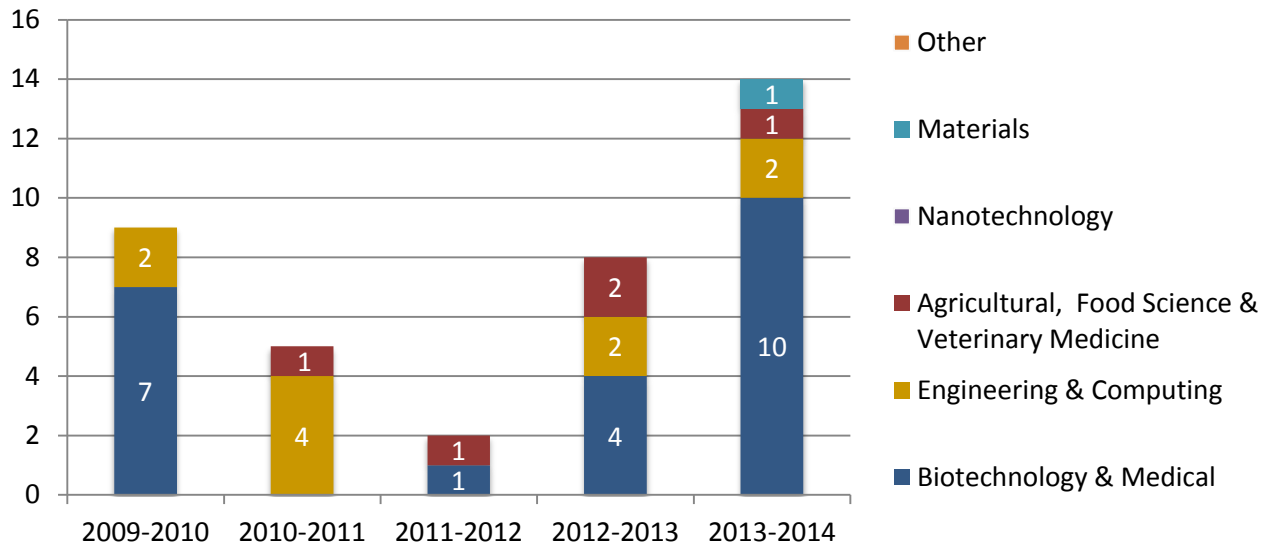
Assessments of technology transfer, corporate development and innovation capacity within the OR revealed that OR should develop a new unit to enhance the university's ability to start new companies and to create much-needed links to business and other users of intellectual property developments. The Huron report specifically recommended that such a unit should be responsible for developing an entrepreneur-in-residence program, coordinating networking and outreach, and managing relationships with an incubator. For clarity, the Huron report recommended that this new unit should not be a rebuild of the former Business Development Office, which was eliminated during early budget cutting activities at UC Davis, but should instead be focused on the creation of relationships that will enhance both the number and quality of companies that start from UC Davis technologies.

In response to these recommendations, the OR embarked on creating a new campus model for entrepreneurship in collaboration with the Graduate School for Management and integration of efforts with the Child Family Institute for Innovation and Entrepreneurship. The key to this new model was creation of a new unit called Venture Catalyst, under the leadership of the AVC for TMCR. The mission of Venture Catalyst is to catalyze the translation of university research and technology into the marketplace by driving the successful development of new ventures based on UC Davis intellectual property. Venture Catalyst works alongside the Child Family Institute for Innovation and Entrepreneurship and other academic and administrative units to achieve an integrated and coordinated approach to translating technology into viable commercial enterprises.

In FY 13-14, the Associate Director for Economic Engagement, Steve Lockett, and the Venture Catalyst unit supporting analyst were hired. The Associate Director for New Venture Resources, Zane Starkewolfe, was also recently hired and is responsible for developing and implementing programs designed to provide and enable access to resources in support of new venture formation and development. When fully staffed, Venture Catalyst will provide direct assistance to faculty entrepreneurs in company formation; facilitate access to start-up resources, including incubation spaces, innovation funding and investment capital; and facilitate access to community and regional resources. Venture Catalyst's goals are to promote the creation of start-up companies from university research and to create business links with regional, state and international business and venture communities. Additionally, Venture Catalyst is forging a collaborative relationship with the Child Family Institute for Innovation and Entrepreneurship to promote entrepreneurship among the faculty and increase the number of faculty-led start-up companies.

Though the unit was only formed in the summer of 2013 and all positions are yet to be filled, Venture Catalyst has already demonstrated visible impact on the commercialization of UC Davis technologies, including a record high of 14 new start-up companies launched in FY 13-14. As the following figure shows, this is nearly twice as many as the preceding year and the largest number of new ventures based on UC Davis technology to be started in a single year.

Figure 7: UC Davis Start-up Companies\*



\* Year of start-up company formation based on the date the company first acquired rights under a license, option or letter of intent agreement granting rights to a UC invention.

Additional efforts by Venture Catalyst include:

- 1) Facilitation of access to Small Business Innovation Research Program workshops designed specifically for the benefit of entrepreneurial researchers on campus in collaboration with the Institute for Quantitative Biosciences (QB3). These workshops were offered to multiple nascent and established UC Davis start-ups, leading to at least one successful grant recipient in the 2013-14 fiscal year.
- 2) Leveraging new campus initiatives driven by the VCR and Venture Catalyst, TMCR has begun discussions to form a strategic partnership with the founding campuses of QB3 with the goal of forming “QB4.” Establishing a formal relationship under the proposed QB4, between four northern California UC campuses — Davis, San Francisco, Berkeley, and Santa Cruz — will create unprecedented opportunities for synergistic collaborations to promote and accelerate innovative research that can integrate the quantitative impact of biological systems at all levels of complexity including translating research from laboratory to market.
- 3) The Blue Ribbon Committee emphasized that the campus must “deepen partnerships with regional entrepreneurial and businesses organizations.” To this end, Venture Catalyst has formed a collaboration with the campus Government and Community Relations team to engage more effectively with local and regional economic development organizations and governmental entities, including the Davis, Sacramento and Northern California business communities. Effective engagements have occurred with, among others, the Sacramento Area Regional Technology Alliance (SARTA), the Next Economy Capital Region Prosperity Plan, and the first UC Berkeley Innovation Symposium. AVC Pathak also serves on the advisory boards for the Ecosystem for Biophotonics Innovation and the ETTC.

- 4) Venture Catalyst and InnovationAccess collaboratively facilitated finalist selection in the first year of the UC Center for Accelerated Innovation (UC CAI) by developing and managing the external review process.
- 5) In May 2014, Venture Catalyst developed and launched, in collaboration with InnovationAccess, the Science Translation and Innovative Research (STAIR™) grant program to provide dedicated proof-of-concept funding to support translational research at UC Davis. The STAIR program provides university funding and support for innovative research, selected through a competitive review process, to generate early proof-of-concept models to demonstrate commercial feasibility. The goal of the program is to help elevate the commercial potential of research conducted at UC Davis so that society can realize its benefits through future commercialization. A rigorous review of 38 applications resulted in four award recipients. Each awardee received \$50,000 and was paired with an industry mentor to guide the research team from academic research to commercial viability.
- 6) Creation of the Inventor Advantage Program (in conjunction with InnovationAccess) is designed to lower the barriers to start-up formation. This program reduces start-up costs by offering up to \$15,000 of incurred patent expense deferral for start-ups that put in place agreements with the university to secure foundational IP.

## **Office of Corporate Relations**

The Blue Ribbon Committee review recommended multiple actions to prioritize strategy and structure within OR to foster long-term relationships with industry collaborations that uphold the university's mission. The primary objectives identified by the Committee for this new structure within the OR included:

- 1) Improving researchers' ability to enter into partnerships with industry, foundations, and international organizations;
- 2) Integrating IP and licensing with industry research agreements to balance the benefits of licensing income with short- and long-term industry research relationships; and
- 3) Maximizing support for research programs when building industry relationships (sponsored research, affiliate boards, translational research), recognizing the value of direct research support relative to total licensing income.

To accomplish these recommendations and objectives, OCR was transferred from University Relations to the OR. The OCR team was formally integrated into the newly created TMCR division in 2011. *See Appendix III: Current OR Organization.* OCR contributes to the OR's objectives of facilitating enhanced campus research by delivering on its mission to develop, foster and manage strategic relationships with industry in a comprehensive manner that spans multiple interests across academic disciplines. The OCR matches company interests to the university's research strengths, develops strategies for engagement, builds frameworks for research collaborations, and monitors and manages progress of transactions toward desired outcomes in corporate partnerships to support the mission of the university. This includes coordination with academic and administrative units within UC Davis, working

closely with faculty, staff and campus leadership, to manage and advance strategic relationships with companies that have interests crossing multiple colleges, schools and centers.

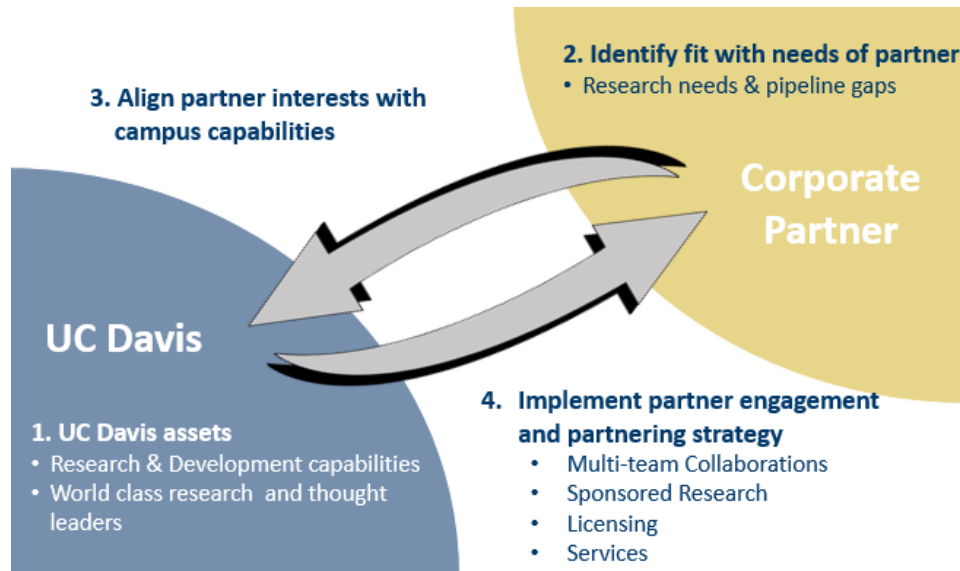
The OCR is both externally and internally oriented, providing mutual benefit to both the private sector and to those on campus wishing to build industry partnerships. To help build credibility in the private sector, OCR coordinates and facilitates transactions that achieve corporate partner investments in campus research. Between spring of 2011 to the end of FY 13-14, OCR has facilitated relationships in collaboration with DEVAR for a large number of strategic corporate partners including Mars Incorporated, Agilent Technologies and Chevron.

Additionally, OCR is collaborating closely with InnovationAccess and IRSI to facilitate commercial interactions and translational assessments and enhancements for RISE program award recipients.

Key successes fostered by OCR include:

- 1) **BGI@UC Davis partnership:** OCR provided coordination for the campus partnership with BGI, a leading genomics company headquartered in China. As part of this alliance, OCR nurtured the development of BGI@UC Davis, a partnership that includes a BGI facility on the UC Davis Health System campus and encourages interactions between campus faculty and BGI researchers. In addition, OCR led the planning and implementation of the 2<sup>nd</sup> International Conference on Genomics in the Americas, held in Sacramento in September 2013, in collaboration with BGI.
- 2) **Collaboration with DEVAR:** In partnership with DEVAR, OCR identified top strategic corporations for sponsored research and philanthropic support. A team from both organizations evaluates these companies annually to designate relationship managers and organize collaborative strategies that match the central focus of the company interaction. In FY 13-14, OCR led the strategy team for 20 of the 43 target companies. Through this effort, OCR is working to elevate partnerships to a higher level of engagement and investment opportunity for each of the identified companies.
- 3) **Building strategic partnerships:** OCR has taken a quantitative and analytical approach to matching corporate interests to the university's areas of focus and expertise, which includes completing a thorough analysis of partnership goals and alignment with the mission of the university. As part of this effort, OCR reengaged or initiated new relationships with eighteen companies in FY 13-14. This new, customer-oriented engagement approach focuses on the articulated needs and interests of the company and matches them to the university's authentic research strengths and scientific interests.

Figure 8: Industry Engagement Framework at UC Davis



- 4) **Biopharmaceutical industry engagement:** OCR has developed and implemented a new approach to strategic engagement with the biopharma industry, which includes connections with over 30 biopharmaceutical companies. An extern program was developed to engage graduate students and postdocs in TMCR efforts to increase productive interactions with biopharma companies. This has resulted in enhanced central knowledge of campus expertise in the research areas of interest to biopharma companies and increased opportunities for effective collaboration.
- 5) **Additional industry engagement:** Following on the development of the biopharmaceutical partnership model, OCR is also looking to expand the strategic industry partnering model to other industry segments. In close collaboration with several academic units over the past year, OCR has developed an initiative on corporate partnerships in the area of food, agriculture and health. This included analysis of over 100 companies, resulting in face-to-face meetings with 14 companies. As part of this initiative, the team worked closely with the UC Davis Seed Biotechnology Center in development of a Corporate Affiliate Partnership Program in the area of plant and seed science. Several successful research collaborations, including companies new to campus research, have been initiated through this program.
- 6) **KNODE™ researcher portal:** In partnership with InnovationAccess, OCR implemented a knowledge-expert portal for biomedical research at UC Davis, called KNODE. This tool allows users to search for specific faculty members or keywords of interest and provides data on publications, grants and patents, as summarized from multiple publically available information sources.
- 7) **Partnership development strategy:** Over the last two years, OCR has been successful in refocusing the partnership development strategy to customer-oriented engagement across UC Davis. This effort included close collaboration with other units across campus



and integration with InnovationAccess and Venture Catalyst to increase focus on innovation and technology translation. Moving forward, the team will focus on carefully tracking the evolution and implementation of strategies to create more efficiencies and greater engagement. As part of this effort, OCR will work to elevate the number of corporate strategic partnerships through

- Expanding company interests past one school or college to other areas on campus;
- Moving from one type of transaction, such as gifts, to multiple types of transactions, such as gifts and sponsored research; and
- Developing a company's interests in technology assets of the campus.

Future goals for the upcoming year include deployment of the Salesforce CRM system across TMCR. In addition, OCR will continue to take an active role, as requested by VCR Lewin, to foster strategic corporate relations for new and emerging campus initiatives. One example is the collaboration with the World Food Center, where OCR is working to define corporate and nonprofit partnership opportunities within the areas of crop production, food and nutrition. Initial efforts are also underway, in partnership with IRS, to define and develop materials to support corporate partnership in new centers being developed at UC Davis.

### **Interdisciplinary Research Support**

At the time of the Blue Ribbon and Huron reviews, the IRS team was one of the most highly successful groups in the OR, providing valuable expertise and support for large-scale interdisciplinary proposal development. Serving its mission to “coordinate the preparation of major grant proposals for large-scale, interdisciplinary research programs,” the IRS team works on grants and contracts that involve multiple schools, colleges, divisions, or institutions to support new research units, programs, or centers at UC Davis that are funded by major extramural research sponsors. The IRS also supports the limited submission system for UC Davis and hosts the PIVOT™ database, which allows faculty to search for funding opportunities in their research and scholarly areas.

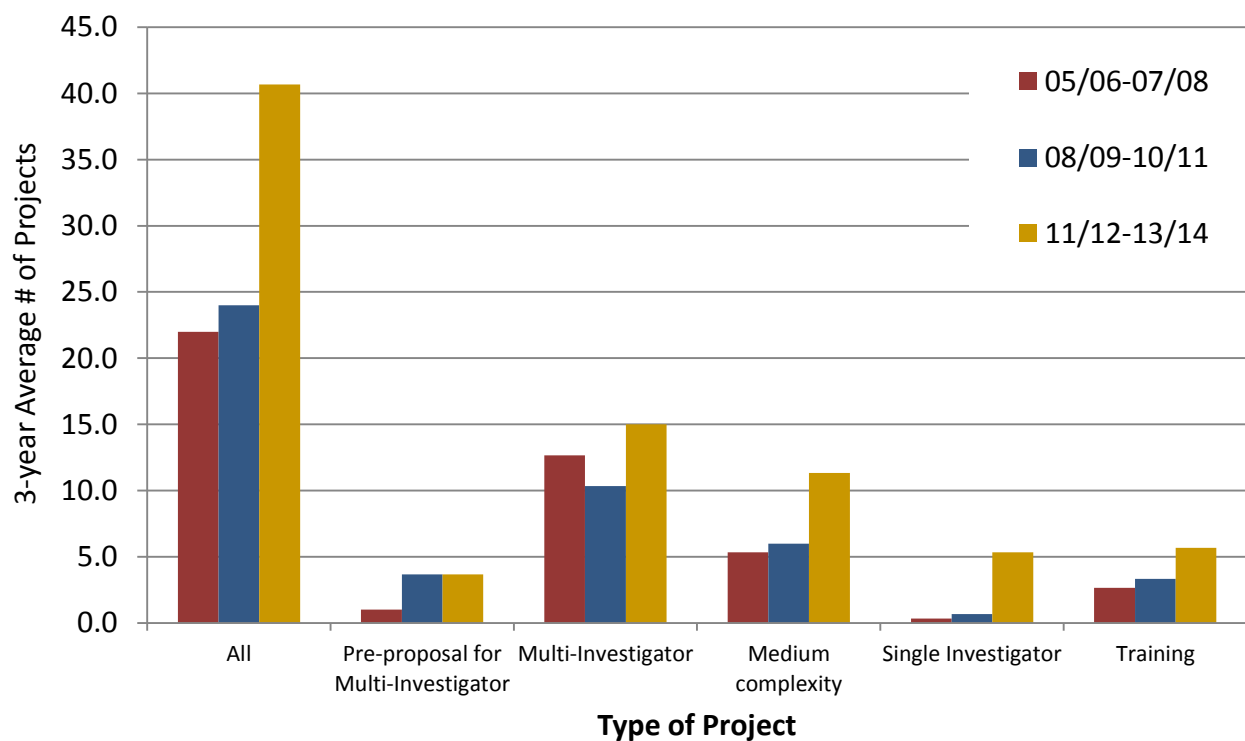
Key recommendations in the internal and external reviews included building upon the already visible successes the IRS team had achieved in research development by expanding the reach of the team's expertise within the Davis research community. Increasing capacity was also recommended in order to meet the anticipated increase in demand for IRS services in response to the Chancellor's goal of reaching \$1 Billion in annual research funding. Staffing limitations also prohibited IRS from actively marketing its services to the academic community, resulting in a situation where the services were well known to some members of the research community, but not all departments and PIs were fully utilizing all of the team's capabilities in funding opportunity identification and proposal development. Another key recommendation called for the OR to invest in an electronic portal or database for IRS to share information with the campus as well as track progress and relationships with sponsors.

With the reorganization of the OR that established the IRSI division, IRS was re-structured to provide greater support to large-scale faculty-led research initiatives. *See Appendix I: Current OR Organization.* Specifically, the IRS team recruited 2.5 additional FTEs in order to support a greater number of large-scale interdisciplinary research proposals, including a dedicated Training Grants specialist co-funded with the Dean of Graduate Studies. The team worked with IT to develop an online resource, launched in August 2013, to streamline and automate the Limited Submissions process (Research Funding

System). The IRS team revamped the weekly circular highlighting research funding opportunities. The team procured and rolled-out a new Funding Opportunities (PIVOT) database that allows faculty to perform keyword searches on open calls for proposals from their desktop. Seven training workshops were held across campus during FY 13-14, including a ‘start-up’ briefing as part of new faculty introductory training.

With the additional resources, the IRS team has realized significant successes on behalf of UC Davis researchers and their sponsored research endeavors. In FY 12-13, the team provided substantial support for major pre-award site visits (three NSF and two NIH site visits in twelve months). Twenty-nine significant projects were developed by IRS (plus additional pre-proposals, concept notes, and advising; see Figure 9). These efforts resulted in total award dollars of \$45,087,315. Additionally, the Limited Submissions Program posted over 225 limited or coordinated submissions opportunities. Approximately 60% received applications from UC Davis faculty and 30% required review via the Limited Submissions process.

**Figure 9: IRS Project Metrics**



In FY 13-14, the IRS team transitioned the nature of its support and services to enable greater reach for more projects. Additional resources, along with the change in its support dynamics, enabled the team to reach out to three times as many faculty and programs than in the year before, with a total of 46 projects served – up from 18 in FY 12-13. In recognition of the IRS group’s campus-wide impact and professional excellence, they were awarded the UC Davis “Citation for Excellence” for team service to the campus in FY 12-13.



Additional modifications to the Limited Submissions system are planned to enhance and expand its capacity for utilization by other campus-based seed grant funding programs, such as the STAIR program in Venture Catalyst. The IRS team will also provide more grantsmanship and faculty development workshops in future years.

## **Research Unit Development**

The Organized Research Units (ORUs) provide support, facilities and infrastructure for multi-disciplinary and interdisciplinary research. The OR is the administrative entity for 10 ORUs, 7 Special Research Programs (SRPs), and 5 campus core facilities - further details can be found at <http://research.ucdavis.edu/u/ru>. According to the WAG and Blue Ribbon Committee reports, the goal of ORUs and centers should be to move from their initial central funding support to acquisition of external funding. Some committee members recommended that the usual expectation for sunseting of central funding support (above indirect cost return) should be set after 3 years, with an extension only if there is strong evidence of applying for and successfully acquiring extramural support.

After forming the new division of IRSI and hiring necessary staff, the OR began in FY 12-13 to conduct reviews of the ORUs and SRPs it administers. A new Research Unit Development group within IRSI was established to support the evolution of OR-reporting research units. OR's business and finance team developed formal annual report templates for all 23 OR research units, which were then reviewed by OR staff. Significant details of the Research Unit reports were also rolled up into the OR annual report to raise campus visibility for the units, and to document their achievements and output.

To aid in transparency and support of interdisciplinary programs, a formal annual budget process was developed in partnership with the OR Business and Finance group to bring a structured, transparent and predictable approach to budgeting. Additionally, ORUs are mandated by policy to be reviewed every five years. The previous administration had suspended these reviews in 2009, so an accelerated review schedule had to be put in place to bring campus back into compliance as quickly as possible. An aggressive plan to review all 10 ORUs over the course of two years has been put in place. Half of these reviews have already been conducted; the other half will occur in FY 14-15.

A comprehensive 1½-day review process was designed to facilitate a rigorous assessment of individual ORU's progress. The process now in place represents many 'best practice' techniques from federal funding agency center reviews. The revamped process involves significant engagement of the faculty and staff directly involved in leading the ORU with the review panel, but also incorporates input from other key stakeholders, such as deans who have faculty involved in a particular ORU, and, most importantly, graduate students. In line with both NSF and NIH center review processes, OR facilitates the direct interaction of graduate students involved in the ORU with the review panel. The graduate student-panel discussion takes place in the absence of any ORU faculty to enable students to speak freely and provide honest and open testimony. The panel also invites students to recommend improvements to the ORU from their vantage point. An entire suite of standardized documentation has now been developed to support the reviews (such as letters of invitation, panel briefing documents, and review report pro-formas). This material was developed to meet the expectations and review criteria outlined for ORUs by policy. The Research Unit Development group also consulted with colleagues at other UC campuses involved in reviewing ORUs. Significant efforts were made to secure distinguished reviewers from other top universities, as well as within UC Davis, as nominated by the

Academic Senate. Each review panel consisted of three external and two UC Davis senate-nominated reviewers, with the chair being chosen from the external cohort.

Five on-campus reviews have now been completed: Crocker Nuclear Lab (CNL), John Muir Institute of the Environment (JMIE), the Center for Healthcare Policy Research, Bodega Marine Laboratory, and the California National Primate Research Center (CNPRC). CNL and JMIE review processes are nearing conclusion and dossiers are currently being routed to the Chancellor and Council of Deans and Vice Chancellors with recommendations for the future of the units based on review findings. Reviews have also been conducted on four Special Research Programs, including the McClellan Nuclear Research Center (MNRC), the Center for Biophotonic Science and Technology (CBST), the Consortium for Women in Research, and the Policy Institute for Energy, Environment and the Economy (PIEE).

- 1) **McClellan Nuclear Research Center** – the report from the review of this center included a number of key recommendations promoting closer alignment and collaboration with the CNL. We anticipate that a conclusive decision on MNRC and CNL will take place in FY 14-15 following further consideration and consultation. Key actions in the report team’s recommendations are underway.
- 2) **Center for Biophotonic Science and Technology**: Following extensive consultation and input from faculty and deans from several schools and colleges, CBST has been reconfigured as the Center for Biophotonics (C4B), and a new Director (Professor Kit Lam) has been appointed with a strong mandate to enhance linkages between C4B and the Davis campus-based research community.
- 3) **Consortium for Women in Research (CWR)**: Following extensive discussions with the unit Director, relevant Deans, the Provost and a large number of faculty, a decision was taken to close the CWR program in June 2014. A number of key activities are being transitioned to other campus units. Importantly this review process has generated a very positive dialogue among a broad range of scholars involved in gender issues across campus, and further research activities in topical areas related to gender are now under development.
- 4) **Policy Institute for Energy, Environment and the Economy**: The first on-campus progress review of this unit occurred late in FY 13-14 and next steps are underway. Redevelopment of the Energy Institute is underway. Professor Dan Sperling has been appointed Interim Director and a faculty advisory group has been put in place.

## **Strategic Initiatives**

Prior to the formation of the IRSI unit, strategic research initiatives were handled by the OR in a relatively ad-hoc manner. The new Strategic Initiatives team supports research development through the creation of campus and external partnerships, primarily with other academic institutions, federal agencies, private foundations and global organizations. Key recommendations from the Blue Ribbon Committee suggested that the OR periodically convene groups of faculty (including centers, ORU directors, program graduate and graduate group chairs) across schools and colleges to proactively identify interdisciplinary teams. The report also asked the OR to network with other institutions with

inter- and multi-disciplinary research support models to gather best practices and methods of successful integration with various offices and campus units.

In response to the committee recommendations, IRSI has recruited a number of experienced individuals to fulfill key research development functions. Professor Lars Berglund (SoM) has been retained as a Special Advisor to the OR, leading strategic research initiatives in the life sciences. In this role, Dr. Berglund, on a 30% time basis, is supporting the development of large-scale life science–focused initiatives that may require faculty expertise across several colleges (SoM, SoN, CBS, SVM and ‘bio’ activities in both CA&ES and CoE). Dr. Darrene Hackler has been appointed on a 50% time basis to support research development activities in the divisions of Social Sciences, and Humanities, Arts and Cultural Studies in the College of Letters and Sciences. Additionally, due to the Chancellor’s strategic decision to invest the indirect funds produced from American Recovery and Reinvestment Act awards into competitive seed grant programs with the best potential to generate new scientific directions and funding streams, IRSI was able to launch two strategic seed funding programs developed by VCR Lewin:

- 1) The RISE program received 119 proposals in 2012. Thirteen proposals were funded, involving over 80 faculty. \$10.9 million in total funds are allocated to these projects over three years.
- 2) The IFHA program received 30 proposals in 2013. Seven proposals were funded. \$3.6 million in total funds are allocated to these projects.

RISE and IFHA projects are actively supported on an ongoing basis by the Research Unit Development group, who coordinate quarterly meetings with the research teams, develop annual reports on the programs overall, and plan the agenda and logistics for annual RISE and IFHA Symposia. They also help coordinate support for each group as needed, helping RISE themes and IFHA clusters raise extramural funding from federal and state agencies and corporate partners and developing new partnerships to help grow the research enterprise of the project.

As of the end of FY 13-14, the 13 RISE themes had submitted 90 proposals with a total funding request of over \$225M. Within a two year timeframe, twenty highly interdisciplinary grants have been approved/awarded funds of over \$45.2M, with decisions still pending on 66% of the remaining submissions.

Additional Strategic Initiatives activities since May 2012 include:

- 1) Established (with Office of the Provost) a new Coastal and Marine Sciences Institute to leverage UC Davis’ existing strengths in coastal and ocean environment research, teaching and outreach. Developed and coordinated the recruitment process for founding director, Professor Richard Grosberg, who was appointed in June 2013.
- 2) A strategic partnership with the Lawrence Berkeley National Laboratory (LBNL) has been created and is moving forward with a number of joint faculty/lab appointments in various stages of development. Collaborations with LBNL Precision Agriculture and Climate Change are ongoing and the IRSI group has enabled access to high-performance computing facilities at Lawrence Berkley Labs.

- 3) Institutional relationship with Lawrence Livermore National Laboratory (LLNL) has been recast and redirected. Four broad areas for collaboration are being developed through a series of faculty workshops in life sciences, high-performance computing, energy and the environment, and physical sciences and engineering. Over 120 faculty and lab researchers have participated in these workshops to date and a number of major opportunities for collaboration are emerging. A new jointly supervised graduate researcher mentorship award program has been conceived, developed and rolled out. Over \$600,000 has been raised to support up to four 3-year graduate fellowships, with funding coming from LLNL, Office of the President and the OR. In mid-June 2014, 25 proposals were received in the first round of this program, and a joint review process involving reviewers from both UC Davis and LLNL has been developed. Funding decisions are expected in Fall 2014.
- 4) A strategic partnership has been developed with the Exploratorium in San Francisco. A five-year Agreement to Collaborate was signed by Chancellor Katehi on January 27, 2014, and a successful launch event was organised in May at the Exploratorium. The processes needed to enable broad Davis faculty engagement with Exploratorium are at a late stage of development and should be rolled out in Fall 2014. The modes of collaboration under development include (1) staff and student exchanges, (2) collaboration on joint research proposals, (3) UC Davis faculty participation in Exploratorium events and lectures, and (4) collaboration opportunities involving development of demonstrations or installations. Progress is being made on all four modes of interaction and we expect to see significant results from these efforts in FY 14-15.
- 5) International research workshops have been conducted in Spain with the Madrid Network. A workshop on Renewable Energy was held in December 2013, and a workshop on cancer research was held in June 2014. Both workshops were well attended and follow-up activities are underway.
- 6) A strategic partnership with the Foundation for Research Support of the State of São Paulo in Brazil is being explored. Preliminary planning is underway to host a delegation of approximately 30 Brazilian scientific leaders at UC Davis in late 2014.
- 7) Coordinated the development of several cross-campus proposals (e.g., NIH 'Big Data to Knowledge' (BD2K) proposal, NIH Broadening Experience in Scientific Training (BEST) award for the Frontiers of University Training to Unlock the Research Enterprise (FUTURE) program) and, along with the IRS team, supported faculty involved in writing the base grant renewal proposal for the CNPRC, submitted mid-June 2014.
- 8) Worked closely with leading neuroscience faculty to design, plan and implement a brainstorming retreat to enable faculty to optimise the university's approach to the Presidential Grand Challenge BRAIN initiative. A workshop has been planned for July 2014, and further support will be provided in FY 14-15.
- 9) Developed a strong working partnership with the Office of Foundation Relations to help faculty identify funding opportunities, optimise proposals and ultimately secure funding from a wide

variety of Foundations. Some recent successes have included multiple awards from the Rita Allen, W. M. Keck and Hartwell Foundations, among others.

- 10) In response to a request from the White House Office of Science and Technology Policy (OSTP) for new grand challenge suggestions, we convened a series of faculty brainstorming sessions and collated input from 50 contributors to develop a UC Davis white paper proposing a grand challenge linking agriculture, food science, nutrition and human health. We presented this paper on a conference call with an OSTP associate director and other staff in November 2013, and our understanding is that the topic is under consideration for possible advancement.

## **Looking Forward (FY 14 – 16)**

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The OR will continue its forward progress to address the remaining recommendations indicated in Appendix V. Some of the key initiatives already planned are discussed in this section.

### **Communication and Reporting**

The OR will continue its path towards more transparency and responsiveness to faculty and staff needs. OR has recently recruited a Director of Marketing and Communications, AJ Cheline, who is the first hire for a new communications team that will be tasked to improve internal and external communications. Initial goals for this team include developing and implementing a social media strategy, re-designing the OR website and developing a quarterly newsletter, called "Research Matters," that will highlight success in research and scholarship and communicate a variety of metrics.

The OR is engaging a campus-wide group to develop research data, metrics and dashboards to allow for consistency in funding information as well as new tools to support data-driven strategic planning by colleges, schools, OR, and campus leadership. Metrics for all major services and programs will be developed and made available to administration, faculty and staff on an annual basis.

Additionally, in 2014, the OR leadership team (VCR and AVCs) will continue to conduct face-to-face meetings with department heads and faculty from each UC Davis academic unit to identify needs and opportunities for research across the campus.

### **Research Administration and Support Systems**

As mentioned earlier in this report, UC Davis is moving toward a comprehensive, campus-wide software solution for research administration needs. The system will maintain proposal, award, negotiation status, subaward, and research compliance data that links to Extramural Funds Accounting records. As a first step in this endeavor, SPO has transitioned from its current Contracts and Grants (C&G) database to SPARK for recording awards activities. Future SPARK releases will allow faculty and staff to view proposal and award data in real-time as well as sync data with Extramural Funds Accounting, and provide system-to-system electronic proposal submissions. The IRB will be releasing IRBNet to campus as an electronic preparation and routing tool for human subject protection protocols. Lastly, upgrades to the research development limited submission system will enable other campus-based seed grant funding opportunities to be electronically prepared, routed and reviewed.

Once the proposal development and submission system has been designed and implemented, SPO will explore opportunities to decentralize proposal submission mechanisms at the local department level.

### **Research Compliance Reviews and Accreditation**

A campus-wide research compliance review has commenced on two fronts with both an internal and external review. The OR, ARM, and the Office of the Provost are all key participants and stakeholders in these reviews, ensuring that we have robust support for the ethical conduct of research and that faculty and leadership needs are addressed relative to compliance processes. Additionally, we will undergo our first UC Davis AAHRPP site visit in an attempt to obtain IRB accreditation.

Other future initiatives include the potential for a “one-system” structure to reduce faculty COI disclosures from five different reporting mechanisms to one. Additionally, the group will be forming an export control compliance workgroup with strategic stakeholders across campus (based on an internal audit review that occurred in FY 13-14). The OR is also engaged in the Biorepository Work Group to enable appropriate policies and procedures for these interests.

### **Core Research Facilities and Resources**

In February 2014, the Core Research Facilities and Resources Task Force released recommendations for resolving resource and redundancy issues and providing structural support and marketing tools for core research facilities and resources at UC Davis. In the upcoming year, implementation plans for adopting the recommendations in the report will be developed and resourced.

Current activities underway include recruitments of an Associate Director and a Faculty Director. The overall goal is to support the infrastructure necessary for faculty research success while simultaneously reducing redundant allocations of resources and improving efficiency for Core Research resources at UC Davis, including an exploration of Regional Cores in Northern California.

### **International Programs**

With the growth of global programs such as the World Food Center (WFC) and research collaborations in China, Europe, and South America, the OR recognizes the need to provide strategic direction and establish the infrastructure to allow these international research collaborations to launch and thrive. Key international collaborations in partnership with University Outreach and International Programs will be supported by both the IRSI team and a new International Negotiations Specialist within OR.

### **Technology Transfer**

Several new programs have been developed and will be implemented by the TMCR division to facilitate the transfer of technology from the university so that societal impacts of cutting-edge research can be realized.

The Venture Catalyst Smart Toolkit for Accelerated Research Translation (START™) is expected to provide a variety of tools, resources, assistance and programs to support campus researchers seeking assistance in creating successful start-ups based on university IP. Offerings of the START program will include:



- 1) **LegalNet™**: Venture Catalyst has worked closely with law firms to provide START participants with a set package of services at no charge, including incorporation/entity formation, standard legal documents (Non-Disclosure Agreements, employment agreements, etc.), assistance with a pre-funding capitalization table, and preliminary review of IP position. Venture Catalyst START companies are responsible for associated filing fees. Although companies are not obligated to continue to use their services after incorporation, START participants may want to continue the relationship with the trusted legal firm.
- 2) **MentorNet™ and VentureNet™**: These two programs connect early stage entrepreneurs with needed services and resources. For start-ups looking for advice on technology areas, services needed, or how to navigate through a particular industry or regulatory process, MentorNet will connect the start-ups with individuals who have experience and knowledge in the required field. VentureNet will connect start-ups with resources and services provided by a variety of external entities, including testing facilities, accounting assistance, and human resource services. Both MentorNet and VentureNet will provide services to UC Davis start-ups that are not traditionally found inside a university.
- 3) **DRIVE™**: The Venture Catalyst Distributed Research Incubation & Venture Engine (DRIVE™) Program is anticipated to be comprised of a distributed network of start-up incubation facilities (the DRIVE Network™) launched through the OR by Venture Catalyst. The goal is to provide UC Davis start-ups, as well as nascent UC Davis technology ventures, easy access to affordable, mixed office/lab business incubation spaces for translational and innovative research in close proximity to the UC Davis campus (Davis and Sacramento). We anticipate an international extension of this program, the Wide-Area Accelerated Research Partnerships (WARP DRIVE™), that will offer additional advantages for institutions to explore and develop procedures for collaborative intellectual property protection, gain access to local expertise and cost advantages, and leverage complementary technologies and services with the objective of facilitating the creation of more competitive and efficient start-ups

## **Corporate Partnerships and Economic Development**

Increasing corporate engagement across the campus continues to be a priority. The OCR will continue to take an active role, as requested by leadership, to foster strategic corporate relations for new and emerging campus initiatives. One example is the office's collaboration with the WFC, where OCR is working to define corporate partnership opportunities within the areas of food and nutrition. Initial efforts are also underway, in partnership with IRS, to define and develop materials to support engagement of corporate partnership in new centers being developed at UC Davis.

The UC Davis Visiting International Scholar Training and Research (VISTR™) program is a new program to support international research collaborations between UC Davis faculty and private industry sponsors. VISTR brings researchers employed by companies located outside of the United States to UC Davis laboratories to conduct research alongside a UC Davis faculty mentor for up to two years. The faculty mentor will provide training and research opportunities in a defined research program that is sponsored through support by the scholar's company and UC Davis grants, when available. While at UC Davis, the scholar will be able to network with other faculty and researchers at UC Davis. VISTR is a

new program to support international research collaborations between UC Davis faculty and private-industry sponsors.

### **Implementation of Salesforce**

The TMCR division is implementing Salesforce CRM system to better identify opportunities, streamline processes, provide better tracking metrics and improve customer service. The implementation will provide benefits to InnovationAccess, SPO, Venture Catalyst and OCR.

### **Organized Research Units and Special Research Programs**

The comprehensive five-year reviews of the ORUs will continue for the remaining five ORUs. In addition, reviews of the SRPs will be conducted and development of financial and structural oversight mechanisms will be finalized and implemented.

The OR will also continue to support the RISE and IFHA project teams to secure the extramural funding they need to continue beyond the initial 3-year awards.

### **Strategic Initiatives**

The SI team will continue its progression of services and structure to broaden support of interdisciplinary research development. The team plans to work closely with the Data Science Initiative teams, the campus Chief Information Officer and other key stakeholders to deliver a more robust IT infrastructure to support research activities on campus.

Another area of focus for the SI team will be to further develop key partnerships. The partnership with Lawrence Livermore National Lab will be reinvigorated by delivering a number of collaborative funding mechanisms and streamlining the process for faculty engagement. The collaborative model with the Exploratorium of San Francisco will be further defined and engagement methods for faculty and students will be established and communicated.

### **Chancellor and Provost Initiatives**

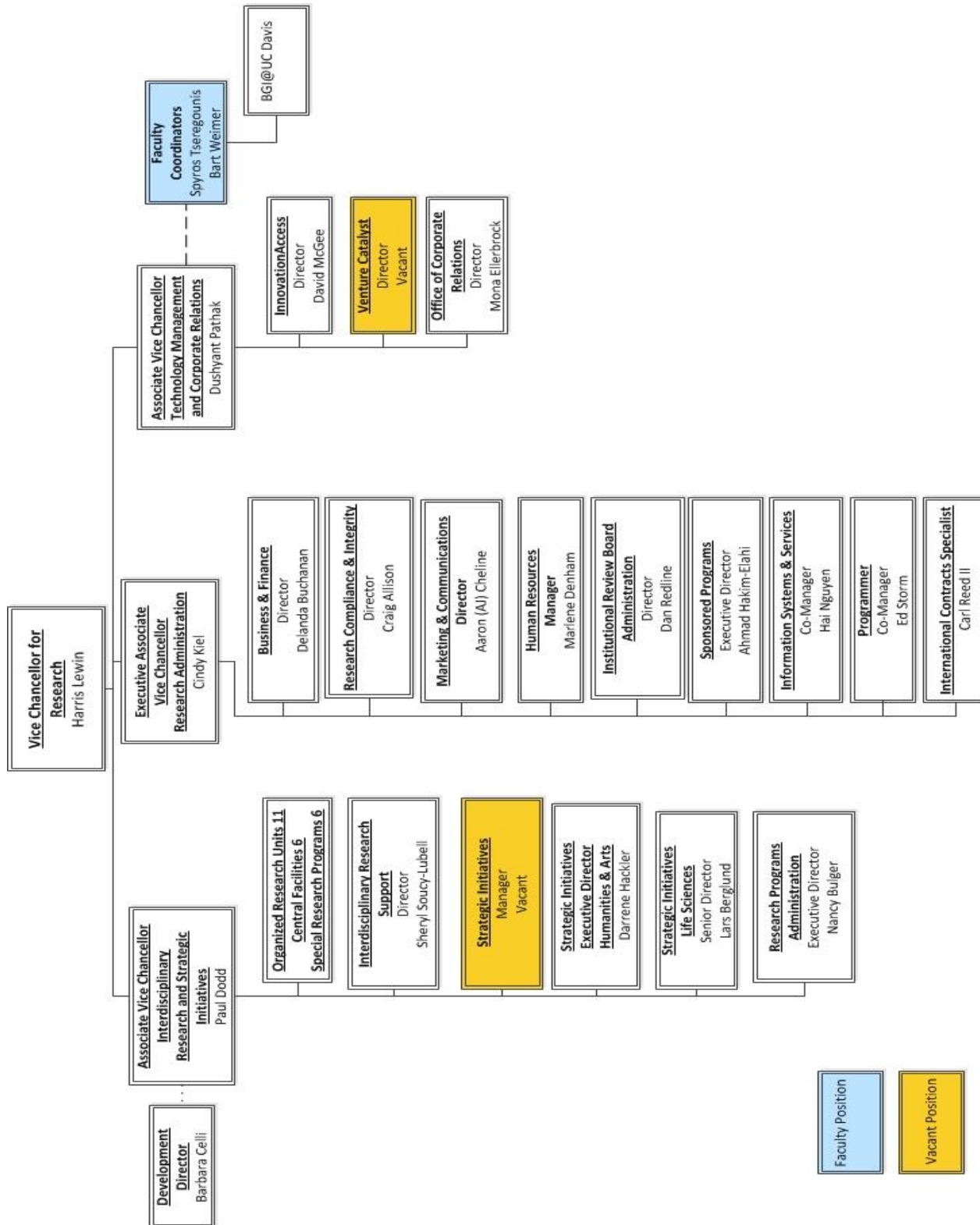
The VCR and OR staff are involved in numerous campus initiatives led by the Chancellor and Provost. These include the World Food Center, Mars Innovation Institute, 2020 Initiative, Madrid Initiative, Data Science Initiative, Third Campus Initiative, and the Chemistry Building Core Facilities Committee. The extended range and capacity of the OR's executive team permits it to provide leadership to these important strategic activities.

### **Presidential Initiatives**

The VCR and OR staff have been called upon by the Office of the President to participate in several of her strategic initiatives, including providing support for the President's Innovation Council, the Pilot Program for Equity, representation on the Technology Transfer Advisory Council, participation on the Portfolio Review Group (UC-wide research programs), the International Policy Development Group, and the Mexico Collaboration Initiative. In addition, OR participates in the Uniform Guidance Taskforce, Open Access Policy Revisions Taskforce, Export Trade Control Policy Development Taskforce, Foreign Affiliates Taskforce, and the F&A Waiver Policy Revisions Taskforce. All of the above activities will provide direct benefit to the research and technology transfer activities of UC Davis faculty.



## APPENDIX I: Current Office of Research Organization Chart



## APPENDIX II: OR Staffing Levels

The OR headcount as of April 8, 2010 was 97 FTE. The Huron Report's new hire recommendation was an additional 26.5 FTE. Those recommended positions included:

- 6 positions for the Venture Catalyst unit ("New Ventures")
- 20.5 additional new positions of critical need, including SPO, which was identified as about 13% below industry averages for comparable institutions.
  - Note: When Huron recommended these staffing levels, SPO was processing \$684 million in annual research awards. They currently process \$704 million, an increase of \$20 million (2.9%)

**Table 4: Proposals Submitted per Pre-Award FTE**

Metric	Private	Public	Industry Average	Davis in FY 2009-10	Davis in FY 2012-13
<b>Proposals (Submitted) per Pre-Award FTE</b>	<b>117</b>	<b>106</b>	<b>108</b>	<b>146</b>	<b>107</b>

In addition to the 26.5 positions recommended by Huron, the Chancellor approved 27 future growth positions identified as critical needs after a FY 10-11 reorganization of OR. These positions were deemed necessary to support current OR infrastructure, as well as future growth, in order to properly fulfill OR's mission. The additional positions include support for:

- IRB Administration (*not included in Huron review*)
- Research Compliance and Integrity
- IT Services
- Communications
- SPO

Most of these positions have been filled, though a few are in various stages of recruitment (*see table on next page*). The current headcount for the OR is 123.8 FTE, an increase of 26.8 FTE, or 26.6%, since April 8, 2010.

## APPENDIX II (cont.): OR Staffing Levels

Table 5: Individual Positions

POSITION	FTE	STATUS	POSITION	HIRE DATE	FTE
Intellectual Property Officer - Analyst VIII	1.00	Hired	IP Officer	05/21/12	1.00
Intellectual Property Officer - Analyst VIII	1.00	Hired	IP Officer	10/01/11	1.00
Intellectual Property Officer - MSP II	1.00	Hired	IP Officer	07/01/11	1.00
Intellectual Property - Analyst III	1.00	Hired	Analyst III	03/01/12	1.00
Intellectual Property - Analyst III	1.00	Hired	Analyst III	08/13/12	1.00
Intellectual Property - Analyst III	1.00	Hired	Analyst III	07/10/13	1.00
Intellectual Property - __Assistant III (Administrative Support)	1.00	Hired	__Assistant II	05/07/12	1.00
Sponsored Programs - Contract & Grant Analyst V - Supervisor (SOM)	1.00	Hired	Analyst V-Supervisor	06/25/12	1.00
Sponsored Programs - Contract & Grant Analyst V - Supervisor (add'l)	1.00	*** repurposed for various reclasses within the unit ***			
Sponsored Programs - Contract & Grant Analyst III	1.00	Hired	Analyst III	10/10/11	1.00
Sponsored Programs - Contract & Grant Analyst III	1.00	Hired	Analyst III	10/22/12	1.00
Sponsored Programs - Contract & Grant Analyst III	1.00	Hired	Analyst III	10/24/11	1.00
Sponsored Programs - Contract & Grant Analyst II	1.00	Hired	Analyst II	12/01/11	1.00
Sponsored Programs - Contract & Grant Analyst II	1.00	Hired	Analyst II	06/01/12	1.00

Sponsored Programs - EDMS Admin Assistant II	1.00	Hired	___Assistant II	10/24/11	1.00
Business & Finance - EDMS Admin Assistant II (repurposed to Data Analyst)	1.00	In progress			
Interdisciplinary Research Support - Editorial Coordinator/Analyst IV	1.00	Hired	Analyst IV	07/01/13	1.00
Interdisciplinary Research Support - Proposal Coordinator/Analyst I (w/ Graduate Studies)	0.50	Hired	Analyst I	04/30/12	0.50
Interdisciplinary Research Support - Analyst I - Data Collection, Analysis, Training	1.00	In progress			
Interdisciplinary Research Support - Limited Submission Analyst I	1.00	Hired	Analyst I	07/01/11	1.00
Interdisciplinary Research Support – Editorial Coordinator (add'l)	1.00	In progress			
	<b>20.50</b>				<b>16.50</b>
Venture Catalyst - Assoc. Dir -Business Development - MSP IV	1.00	Hired	MSP IV	10/07/13	1.00
Venture Catalyst - Business Development Manager - MSP II	1.00	In progress			
Venture Catalyst - Business Development Analyst II	1.00	In progress			
Venture Catalyst - ___Administrative Asst. III	1.00	In progress			
Venture Catalyst - Analyst III (IP Communication/ Marketing - Contract)	1.00	Hired	Analyst III	05/29/13	1.00
Venture Catalyst - Analyst III (*** Repurposed for InnovationAccess hire ***)	1.00	Hired	Analyst III	10/15/12	1.00
	<b>7.00</b>				<b>3.00</b>
<b>Total Open Huron FTE</b>	<b>26.50</b>		<b>Total Filled FTE</b>		<b>19.50</b>

## APPENDIX III: UC Davis Annual Research Funding

Figure 10: UC Davis Extramural Funding (\$ Millions)

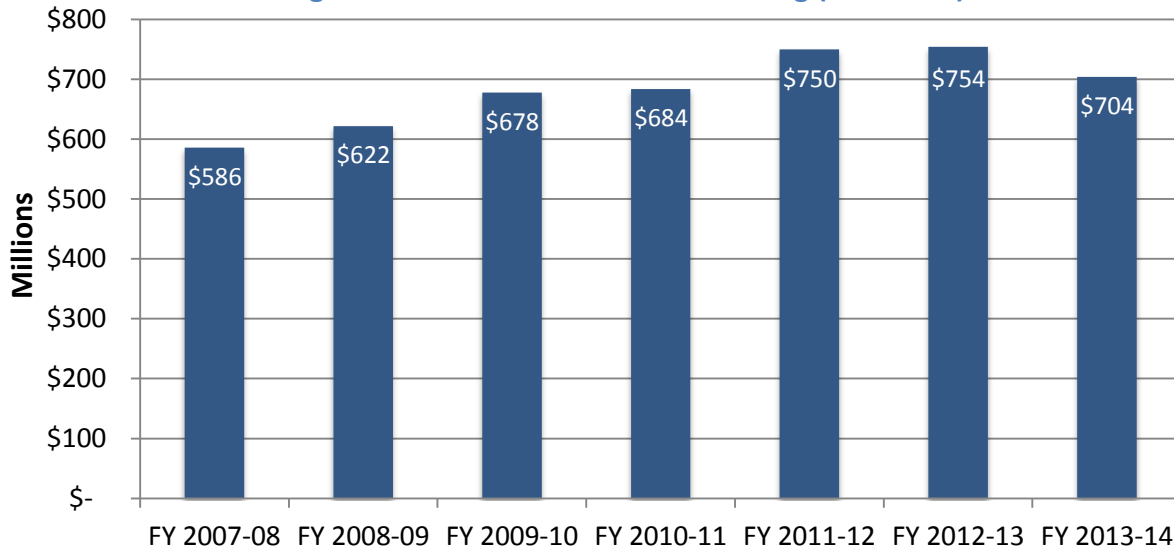
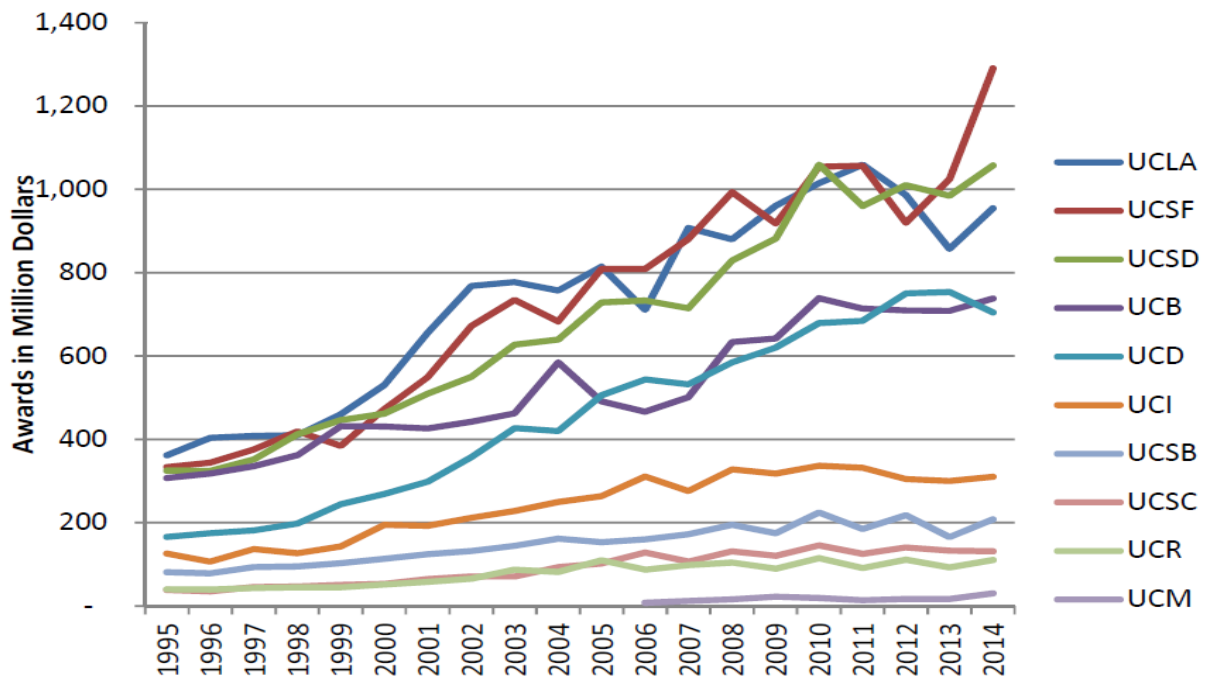
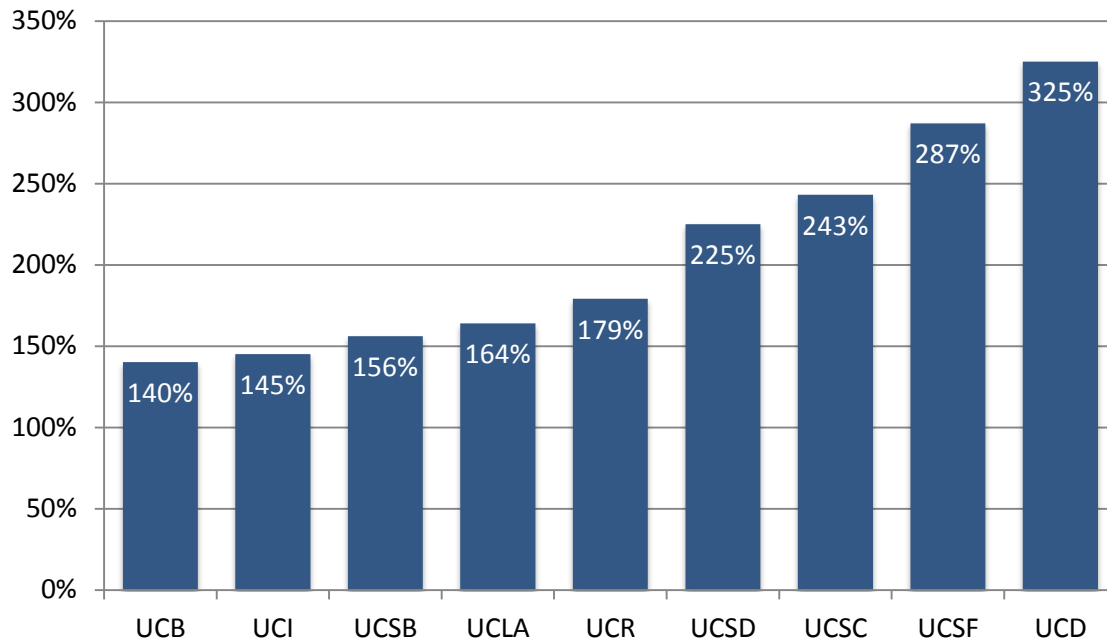


Figure 11: UC System-wide Extramural Research Awards (FY1994-95 to FY2013-14)



## APPENDIX III (cont.): UC Davis Annual Research Funding

Figure 12: Percentage of Award Increases, UC System-wide (FY 1994-95 to FY 2013-14)



## APPENDIX IV: Table of Metrics for InnovationAccess

Table 6: Customer Service Metrics

I.	Invention Evaluation
a.	Date of receipt of ROI by IA
b.	Date of acknowledgement of ROI to inventor(s)
c.	Date of first meeting/discussion of invention with inventor(s)
d.	Date of decision to file/not file/suspension awaiting inventor data
i.	Date of informing inventor(s) of decision
ii.	Date of follow-up with inventor concerning more data
II.	Patent Prosecution
a.	Date of filing of patent application
b.	Date of informing inventor(s) of patent filing
III.	Marketing
a.	Date of posting Non-confidential Disclosure (NCD) on IA website
b.	Date of contact with inventor(s) requesting licensee leads
c.	Date of contact with prospective licensees
d.	Date of follow-up with prospective licensees

- 
- IV. Licensing
    - a. Date of licensee interest
    - b. Date of first meeting with prospective licensee
    - c. Date of decision of go/no go with license negotiation
    - d. Date of submission of term sheet to prospective licensee
    - e. Date of informing inventor of go/no go decision
    - f. Date of submission of draft option or license agreement to licensee
    - g. Date of execution of agreement
    - h. Date of informing inventor of executed agreement
  - V. Material Transfer Agreements
    - a. Date MTA request received by IA
    - b. Date MTA request acknowledged to requestor
    - c. Date MTA draft submitted to other party
    - d. Date faculty informed about status of MTA
    - e. Date MTA executed/negotiation terminated
    - f. Date faculty informed of MTA status
- 

## **APPENDIX V: Remaining OR-Only Recommendations**

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PDF attached separately.

## **APPENDIX VI: Complete List of OR-Only Recommendations**

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PDF attached separately.

## **APPENDIX VII: Complete List of Recommendations**

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PDF attached separately.