1.0 General Overview

The University of California Riverside is one of the most ethnically diverse research universities in the UC system. Baseline data of the current UCR population and facilities is as such\(^1\):

\(^1\) Based on 2013-2014 data
• Over 21,000 students (18,000 Undergraduate and 3,000 Graduate)
• Over 4,000 faculty and staff
• 101 Bachelor degree programs, 52 master’s degree programs, 42 Ph. D programs
• Campus is located on 1,200 acres
• Over 4.5 million square feet of facilities
• Revenues of over $750 M
• Operating expenditures of $725 M

Through the Office of Research and Economic Development, UCR is bringing advanced research from the lab to the marketplace while generating $1.4 billion in economic impacts. In FY 2013-14, we attracted approximately $111 million in research funding, including 806 contracts as well as receiving 19 new patents.

Research Funding Overview

Contract and Grant Awards 2013-14

• $69.2 Million Federal – 63%
• $7.9 Million State – 7%
• $2.4 Million Other Government – 2%
• $9.3 Million Industry – 9%
• $15.9 Million Non-Profit – 14%
• $5.9 Million UC System – 5%

2.0 MISSION STATEMENT

The Office of Research and Economic Development (RED) is committed to the growth, integrity, diversity and success of the UCR research enterprise and the creation of new knowledge, advanced education, creative inspiration, and economic prosperity.

RED Core Values

R - Respectful, responsible, resourceful and responsive

E – Emphasizing clarity, communication, accountability and integrity

D - Dedicated to team work, work-life balance and professionalism

RED Vision

• Increase federal funding for research, education, outreach, and infrastructure to match the profile of an AAU institution
• Enhance research collaboration across schools and departments
• Increase commercialization and entrepreneurship activity at UCR
• Increase multi-faceted R&D partnerships with established companies.
• Create an innovation ecosystem around Riverside in partnerships with the commercial sector, the state, the county and the city government.
• Establish formal training programs for faculty and staff on proposal development, the grant submission process, research integrity, and commercialization.
• Continue to improve relationships and build rapport with faculty and staff.
• Continue to build camaraderie and communication within RED.

3.0 DESCRIPTION OF SERVICE LEVELS

The Vice Chancellor for Research and Economic Development, ORG 24, consists of the following Units:

• Vice Chancellor’s office
• Sponsored Programs Administration
• Proposal Development
• Campus Veterinarian
• Research Integrity
• Corporate and Strategic Partnerships
• Economic Development/New Ventures
• Central Facility for Advanced Microscopy and Microanalysis (CFAMM)
• Campus Vivaria

The Vice Chancellor’s office manages the day-to-day operations for Research and Economic Development. This consists of the Chief of Staff (COS), Chief Financial and Administrative Office (CFAO), Executive Assistant to the Vice Chancellor (EA), Financial Operations Manager (FOM) and receptionist.

The CFAO, FOM and receptionist manage the human resource, financial, purchasing and administrative functions for the Vice Chancellor and Units.

The COS and EA support the Vice Chancellor and assist with managing the various activities/specific projects for the Vice Chancellor.

The Vice Chancellor’s office manages the Collaborative Seed Grant Program and Proof-of-Concept for Technology Commercialization Award Program.

The Collaborative Seed Grant Program grants are internal funds for UCR faculty teams to collaborate and publish in advance of proposing multi-investigator projects and centers to external agencies. Teams with seed funding who generate preliminary results and gain experience working jointly have proven more successful when they later compete for multi-investigator and/or multidisciplinary grants.

The purpose of the collaborative seed grant program is to serve as a catalyst for UCR faculty to form new teams, the seed grant program is intended to initiate new intellectual directions for faculty and to make UCR more competitive for multidisciplinary grants. Selection criteria for
seed grants reward projects that create new relationships and synergies across schools, departments or centers. Key considerations include whether the project can be leveraged toward new externally-funded research, and whether the project cannot be otherwise initiated using regular department or school resources. An ideal project would apply for external funding within 6-10 months following seed funding.

The Proof of Concept for Technology Commercialization (POC) Award Program. The POC award provides UCR investigators up to $35,000 to further develop a commercializable invention based upon UCR intellectual property not yet licensed. The effort should address a critical issue, such as creating a prototype, scaling up a process, or obtaining additional data to support a commercialization effort by making the invention more attractive to licensees or investors. The award shall be used only for technical salaries and benefits, supplies, vivarium or other facilities fees and contracted services directly related to the project.

The Vice Chancellors office also provides partial matching funds when required or advantageous for federal grants, in collaborations with the deans or EVC/Provost.

Below are the services provided by the Office of Research and Economic Development that are included in core service allocation?

### 3.1 SPONSORED PROGRAMS ADMINISTRATION (SPA) AND CORPORATE CONTRACTS (CC)

Due to the nature of the sponsored programs administration, there are no distinct levels of service. All service should be based first on priority of deadlines, complexity of informational need, standards of procedures and adherence to the participation, and by the individuals or departments that require commitment and accountability.

Research and Economic Development (RED), through its Sponsored Programs Administration (SPA) and Corporate Contracts (CC) units, are UCR’s institutional offices responsible for reviewing, endorsing and submitting proposals to extramural sponsors for research, training, instructional and other activities. SPA & CC is also responsible for preparing, negotiating, and accepting agreements for projects funded by federal and state agencies, foundations, corporations, marketing boards, and other public and private sources. Other responsibilities include: providing advice to faculty and staff regarding the management and administration of sponsored programs; interpreting the terms and conditions of awards, sponsor and university policies and government regulations; monitoring institutional compliance with government regulations and award requirements; drafting, negotiating, executing and monitoring sub agreements under UCR's prime awards; coordinating pre-award and non-accounting post-award actions requiring either institutional or sponsor prior approval; and drafting, negotiating and executing various other agreements related to UCR’s prime awards (e.g., data use agreements, collaboration agreements, etc.).

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal Review and Submission</td>
<td>Review proposals for compliance with government and sponsor regulations</td>
</tr>
<tr>
<td></td>
<td>Submit proposals on behalf of the Regents of the University of California</td>
</tr>
<tr>
<td></td>
<td>Provide software for proposal submission (cayuse) and coordinate with Computing and Communications on eCAF</td>
</tr>
<tr>
<td></td>
<td>Maintain databases of proposal submissions and grant awards</td>
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</tbody>
</table>
## 3.2 Proposal Development

RED supports grant proposal development through its **Proposal Development** unit. Responsibilities include coordination with faculty and staff across the UCR campus to generate competitive proposals to federal and state agencies, foundations, and other entities. The current two-member staff reviews proposal narratives for clarity, brevity, completeness, and responsiveness to funder priorities and requirements. Writing sections or sometimes the majority of the proposal *de novo* depends upon the kind of grant being sought and its scope. Assistance to faculty submitting proposals includes help identifying opportunities, participation in planning, suggestion of an evaluator, preparation of graphics, and other tasks as needed. Activities also include management of internal review and selection of so-called “limited,” competitions for which agencies restrict the number of proposals allowed.

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
</table>
| Research Funding | Write proposals  
|             | Edit proposals  
|             | Coordinate proposal activity in academic units  
|             | Identify/disseminate select funding proposal opportunities  
|             | Manage internal competitions for RFPs that limit the number of proposal submissions |
3.3 CAMPUS VETERINARIAN

The Office of Campus Veterinarian (OCV) oversees all animal facilities at the University of California, Riverside (UCR). The laboratory animal care and use program at UC Riverside complies with federal, state, and local guidelines for laboratory animal care.

UC Riverside adheres to Federal laws and regulations as published in:

- Animal Welfare Act (AWA)
- Guide for the Care and Use of Laboratory Animals (Guide);
- Public Health Service Policy;
- U.S. Government Principles Regarding the Care and Use of Animals.

The University has a letter of assurance on file with the Public Health Service and is registered as a research facility with the United States Department of Agriculture (USDA), and is accredited by the Association for Assessment and Accreditation of Laboratory Animals Care International (AAALAC).

UC Riverside’s program for the humane care and use of laboratory animals involves several entities working together to ensure that the University complies with the numerous Federal, state, local, and institutional guidelines and regulations, and remains accredited by their regulatory agencies. These entities are the:

- Institutional Animal Care and Use Committee (IACUC),
- Research Compliance Officer, Office of Research Integrity,
- Office of Campus Veterinarian (OCV),
- Environmental Health and Safety
- Institutional Biosafety Committee (IBC)
- Radiation Safety Committee

All animal use at UC Riverside facilities is covered by IACUC approved Animal Use Protocols.

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Medical Care</td>
<td>Preventive medicine</td>
</tr>
<tr>
<td></td>
<td>Use of anesthetics, analgesics, sedatives, and tranquilizers</td>
</tr>
<tr>
<td></td>
<td>Perioperative care</td>
</tr>
<tr>
<td></td>
<td>Diagnostic procedures</td>
</tr>
<tr>
<td></td>
<td>Treatment of ill animals</td>
</tr>
<tr>
<td></td>
<td>Euthanasia</td>
</tr>
<tr>
<td></td>
<td>Animal husbandry</td>
</tr>
<tr>
<td>Category</td>
<td>Services Provided</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td>Hazard oversight</td>
</tr>
<tr>
<td></td>
<td>Training</td>
</tr>
<tr>
<td></td>
<td>Emergency care</td>
</tr>
</tbody>
</table>
### 3.4 Research Integrity

The Office of **Research Integrity** provides broad oversight, resources and education for integrity and compliance issues relating to the conduct of research at the University of California, Riverside. The Office of Research Integrity carries out its responsibilities by:

- Monitor and make recommendations concerning ethical, professional, federal, state and other (e.g. international) policies relating to research;
- Creating and maintaining the UCR research integrity and compliance infrastructure;
- Educate and train researchers in the responsible conduct of research and research compliance;
- Implement policy and procedural requirements relating to research misconduct and the federal Office of Research Integrity.

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Protocol</td>
<td>Advise, train, and assist investigators in protocol development</td>
</tr>
<tr>
<td>Development</td>
<td>Advise and educate investigators regarding regulations and policies</td>
</tr>
<tr>
<td>Regulatory Protocol</td>
<td>Pre-review protocols and amendments</td>
</tr>
<tr>
<td>Review</td>
<td>Facilitate processing and review of protocols and amendments</td>
</tr>
<tr>
<td></td>
<td>Advise reviewers regarding regulation and policy</td>
</tr>
<tr>
<td></td>
<td>Facilitate notices and submissions of renewals</td>
</tr>
<tr>
<td>Regulatory Committee</td>
<td>Prepare agenda and record minutes in accordance with Federal guidelines</td>
</tr>
<tr>
<td>Operation</td>
<td>Advise committees regarding regulations and scientific issues, research issues as</td>
</tr>
<tr>
<td></td>
<td>requested</td>
</tr>
<tr>
<td></td>
<td>Draft committee policies, SOPs, forms and correspondence</td>
</tr>
</tbody>
</table>
### Category | Services Provided
---|---
Regulatory Agency Obligations & Accreditation Maintenance | Schedule, facilitate, and draft reports for required inspections
Investigate non-compliance allegations, draft related reports, provide recommendations to committees and IO regarding relevant regulations, implement committee decisions regarding non-compliance
Complete Annual Reports
Maintain accreditations, registrations, assurances and all required regulatory documentation
Facilitate regulatory agency and accreditation site visits, inspections and audits
Training | Facilitate and document required investigator trainings
Provide campus education regarding regulatory requirements and required public outreach
Occupational Health | Oversee and document IACUC occupational health reviews
Interface with campus units regarding occupational health requirements for biosafety program
General | Liaison with research related campus units to ensure all regulatory, legal, and policy requirements are met
Compare awarded grants and MTAs to protocols, ensure compliance
Comply and execute Public Records Requests
Participate in UC system-wide consideration of relevant policy and response to government/court related issues
Provide consultation regarding research topics, methods, and instrumentation to investigators and other administrative units

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### 3.5 Corporate and Strategic Partnerships

The **Corporate and Strategic Partnerships** (CPS) team at UC Riverside furthers the university’s mission by building relationships between campus and corporations that will enhance the discovery, translation, and application of knowledge that addresses some of the most vexing problems facing society.

Based in the Office of Research and Economic Development, the CSP unit coordinates UCR’s corporate relationships that transcend the boundaries of one school. We assist faculty in identifying and cultivating corporate relationships while also working with industry to identify relevant ways to engage with the university.

The business development model used by the CSP team is focused on developing long-term relationships instead of transactional exchanges. (See fig 1 on pg. 22)

Benefits that flow from corporate partnerships include one or more of the following: gifts, sponsored research contracts, MTAs, access to industry research facilities, jobs and internships for students, real-world research problems, research commercialization, advisory board members, campus speakers, etc.

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Identify prospect pool</td>
</tr>
<tr>
<td>Category</td>
<td>Services Provided</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Business Development Services</td>
<td>Serve as a concierge for companies that want relationships with UCR</td>
</tr>
<tr>
<td></td>
<td>Increase awareness of UCR programs and offerings</td>
</tr>
<tr>
<td></td>
<td>Identify mutual needs and relevant engagement opportunities</td>
</tr>
<tr>
<td></td>
<td>Develop and structure collaborations and partnerships</td>
</tr>
<tr>
<td></td>
<td>Steward and grow existing relationships</td>
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<tr>
<td></td>
<td>Serve as a campus corporate relations expert</td>
</tr>
<tr>
<td>Campus-wide Corporate Coordination</td>
<td>Collaborate with offices and staff throughout campus who interact with companies</td>
</tr>
<tr>
<td></td>
<td>in order to coordinate and leverage effort</td>
</tr>
<tr>
<td></td>
<td>Support faculty, who are, or who want to, engage with industry</td>
</tr>
<tr>
<td></td>
<td>Support Research Centers and Initiatives which want to involve industry</td>
</tr>
<tr>
<td></td>
<td>Support UCR Leadership develop corporate relations strategy</td>
</tr>
<tr>
<td>Enhancing Capabilities: Faculty</td>
<td>Consultations, presentations, training materials, etc.</td>
</tr>
<tr>
<td>Campus Leaders, Research Centers</td>
<td></td>
</tr>
<tr>
<td>Program and Staff Management</td>
<td>Campus Reporting/dashboard</td>
</tr>
<tr>
<td></td>
<td>Coordinate campus-wide Corporate Relations initiatives</td>
</tr>
<tr>
<td></td>
<td>Train and coach staff</td>
</tr>
</tbody>
</table>
3.6 Economic Development/New Ventures

The Mentors for New Ventures is a service provided by RED to faculty and staff. They are responsible for developing and implementing best practices in fostering the development and launch of companies based on innovations generated within the University.

<table>
<thead>
<tr>
<th>Category</th>
<th>Services Provided</th>
</tr>
</thead>
</table>
| Mentoring | Work with faculty, staff and students to assess business potential of University innovations advancing opportunities for commercialization  
Mentor aspiring entrepreneurs in key start up activities related to team formation, strategic marketing, business development, strategic partnering, manufacturing strategy and fund raising  
Working with entrepreneurs, early stage venture capitalists, companies and others to advance innovations toward eventually being spun-out of the University |
| Start-up activities | Develop on campus opportunities to encourage entrepreneurial activities through events like workshops  
Manage resources via web based services for resources encouraging start-up activities  
Coordinate with the Office of Technology Commercialization and Corporate Development to encourage start-up activities  
Assist new start-ups with business development including marketing and pitch elements  
Work with University resources including regional incubator/accelerators, SBA, TriTech, and others |

4.0 SERVICE PERFORMANCE

4.1 SPONSORED PROGRAM ADMINISTRATION

Standard Proposal Lead Time – three (3) full business days prior to the Sponsor Due Date.

Non-standard Proposal Lead Time – a minimum of seven (7) full business days prior to the Sponsor Due Date. Principal Investigators are strongly encouraged to start working with their unit administrator and Sponsored Programs Administration (SPA) at least one month prior to the Sponsor Due Date for non-standard proposals. This will ensure that there is sufficient time to review and resolve any issues, secure special approvals, coordinate with the UC Office of the President, etc. prior to the Sponsor Due Date.

All Proposals (Standard and Non Standard). Notwithstanding the required lead times to guarantee a timely submission, the final proposal ready for submission must be received in the SPA no less than eight (8) business hours before the submission deadline. For example:

<table>
<thead>
<tr>
<th>Sponsor Due Date/Time</th>
<th>Office of Research Due Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, September 1 at 5 p.m. (PST)</td>
<td>Friday, September 1 at 9 a.m. (PST)</td>
</tr>
<tr>
<td>Friday, September 1 at 1 p.m. (PST)</td>
<td>Thursday, August 31 at 2 p.m. (PST)</td>
</tr>
</tbody>
</table>
If SPA receives a proposal without being afforded the appropriate lead time noted above, it will complete its review and approval and submit the proposal to the sponsor. However, SPA cannot guarantee that such proposals will be submitted in time to meet a sponsor’s deadline.

**Criteria for Standard and Non-Standard Proposals**

**Standard proposals** – New, continuing or renewal proposals to:

- U.S. federal government departments, agencies and entities; State of California departments and agencies; University of California entities, including UC-managed DOE labs; U.S. institutions of higher education, or U.S. non-profit sponsors (e.g., foundations, charitable trusts, etc.); and
- Where the resulting award will be a grant, cooperative agreement or sub award; and
- Do not involve any of the elements of a non-standard proposal.

**Non-Standard proposals** – New, continuing or renewal proposals that involve any of the following:

- The PI or a Co-PI has an appointment that requires approval of the VCRED to submit proposals as PI and/or will not hold a UCR appointment for the full period of the proposed work.
- The sponsor’s solicitation states that the resulting award may be, or will be, a contract.
- Submission of a proposal indicates acceptance of award terms and conditions contained in the sponsor’s solicitation.
- A sponsor’s requirement to submit an intellectual property management plan; laboratory safety plan; or any other set of plans that requires coordination with other UCR administrative offices.
- One or more sub awards to entities outside of UCR
- 6. Construction, alterations/renovations of existing space, special space requirements (e.g., renting or leasing space off-campus, approval to access non-UCR facilities).
- Any institutional commitment, including cost sharing, which requires or necessitates the approval of a Dean, Vice Chancellor, the Executive Vice Chancellor and Provost, or the Chancellor.
- Use of a non-standard Facilities and Administrative (F&A) cost rate not previously approved by the Office of the President or where a request for an F&A rate waiver must be coordinated with the Office of the President.
- Total direct costs of more than $5 million per year requested from the sponsor
- Proposals to establish a new center or institute on the campus
- Programs/projects involving a consortium of participants (e.g., other universities and/or for-profit entities).
4.2 PROPOSAL DEVELOPMENT

Currently grant proposal development in RED is carried out by a two-member staff: the Director of Research Development and the Senior Grant Writer/Facilitator, hired in March, 2015. RED research development staff collaborate on some projects with their counterparts in the Schools of Engineering (2), GSOE (1), and Medicine (1). CHASS has been recruiting for a Senior Grant Writer/Facilitator.

Proposal development functions, followed by the number completed by one staff member in 2014:

- Review and suggest edits for narratives written by faculty. Reviewing a typical proposal narrative/abstract takes from one to two days, in some cases working iteratively with the faculty member. 44
- Writing sections, e.g. management plan, outreach plan, and editing for larger proposals. This activity can span days to weeks. 9
- Drafting letters of support. ~2 hours. 11
- Writing entire proposal, planning meetings, editing and assembling faculty-written components. Several weeks of effort 1 (NASA $4.4 million MIRO, awarded)
- Training and presentations. 3
- Planning meetings; interviews of job candidates. 11
- Managing the Limited Submissions website. ~5% time.
- Analysis of funding opportunities; dissemination ~5% time.
- Communication re: projects via e-mail ~10–20% of time

Shortfall: Capacity has not allowed for some last-minute editing requests, e.g. on eCAF forms. Proactive activities are limited by reactive response to faculty editing/writing needs. Early management of proposal preparation, proven to increase success, is being increased and second writer has improved capacity in this area. Number of projects near capacity, exceeded recently during the 2-writer GAANN campaign that resulted in 18 proposals, but not all reviewed.

4.3 CAMPUS VETERINARIAN

The Office of Campus Veterinarian (OCV) oversees the operation of areas housing research animals for multiple users.

The Campus Veterinarian (CV) is responsible for providing excellent animal care and ensures that all research activities are in compliance with all applicable state and federal regulations including the Animal Welfare Act and PHS policy, as well as maintaining AAALAC International accreditation. It is the role of the CV to assure that animals remain healthy and are used in a judicious and humane manner. The CV is also responsible for developing and implementing programs for preventive medicine to minimize the likelihood of animals’ developing clinical illness or injury.
The CV is available to expeditiously assess the animal's condition, treat the animal, investigate an unexpected death, or advise on euthanasia. The CV is on-call 24/7 for such emergency care.

Duties of the CV as part of veterinary medical care include;

- Implementing quarantine procedures, reviewing health records and physiological blood data values of research animals.
- Performing veterinary rounds and providing care and treatment of clinical disease affecting the animals.
- Conducting health surveillance, infectious disease testing, routine physical exams and bio-sample analysis of animals.
- Performing necropsies of animals to investigate unexpected deaths.
- Conducting site visits to vendors, reviewing vendor health information, communicating specific issues related to animal transfer, and tracking overall vendor performance.
- Managing controlled substance inventory;
- Creating, reviewing, and maintaining animal health records.
- Providing guidance to investigators and all personnel involved in the care and use of animals to ensure appropriate husbandry, handling, medical treatment, immobilization, sedation, analgesia, anesthesia, and euthanasia.
- Advising investigators on methods to relieve or alleviate pain and distress, perioperative care, and surgical procedures.
- Advising appropriate use of Personal Protective Equipment (PPE) for the protection of any personnel involved in animal research.
- Advising safe use of hazardous materials when animal experimentation involves hazards.

The CV is a voting member on the IACUC as a veterinary representative. The CV is involved in the review and approval of all animal care and use in the institutional program, including advising on the design and performance of experiments using animals. The CV pre-reviews Animal Use Protocol (AUP) submissions as part of veterinary review, advises personnel performing surgical procedures as part of IACUC monitoring, engages in IACUC policy development and implementation, participates in IACUC’s semi-annual inspections, inspects satellite facilities prior to IACUC’s approval, and ensures animal care and research activities are conducted in accordance with the approved AUPs as it relates to animal welfare and veterinary issues. The CV works with the IACUC in investigating and resolving complaints regarding the animal care and use. The CV routine inspects animal housing areas that are maintained by investigators to ensure all animal research related activities are conducted in accordance with USDA, PHS policy, AAALAC International, UCR policies and procedures. The CV represents the animal housing areas during on-site inspections or visits by regulatory or accrediting agencies, and in meetings with all other government agencies and committees.

The OCV oversees security for all vivarium space, installation, maintenance, and access card and key usage. The office coordinates with the Police Department and the Alarm Shop at Physical Plant to provide new personnel with access and set up password and alarm code.

The CV, as Chair of the Security subcommittee, monitors security of the all campus Vivaria. The CV works with the Police Department and Strategic Communications to provide extra
security whenever animal rights activities are announced locally and nationwide. The CV has access to video images of security cameras that are in place in several locations in the campus Vivaria so that any suspicious activities can be monitored.

The OCV oversees overall operations of all the campus Vivaria. The office is responsible for per diem billing including service fees and subsidy, oversees the procurement, receipt and dissemination of animals, feed/bedding products, authorizes the procurement, receipt, and accountability of husbandry supplies, services and husbandry equipment. The office places work orders for any Physical Plant issues in the Vivaria.

As Director of the OCV, the CV directs and supervises facility operations, space and equipment allocations, personnel functions, and security and safety issues. The CV writes and establishes Standard Operating Procedures (SOPs) for animal care and husbandry practices in the Vivaria to insure specific pathogen free animal housing, evaluates animal facilities and equipment, identifies deficiencies and implements solutions to meet the Federal Animal Welfare Act and Guide’s standards. The CV consults with investigators and candidates to determine special needs such as space, caging, special diets, and animal housing environment.

The CV participates in animal facility renovation, design and planning with campus Capital Programs, A&E and outside architectural planning firms. The CV inputs issues such as space requirements, material and personnel flow within animal facilities, and selection of specialized sanitation and caging equipment.

The CV oversees monitoring of environmental parameters (i.e., temperature, humidity, light cycle, air exchange change rates, air pressure, water quality testing, etc.) and coordinating corrective actions in all the areas within the campus Vivaria. Each animal holding room in the campus Vivaria is equipped with a temperature sensor that will send an alarm signal to the Police Department when the room temperature becomes out of the range. The Police Department then notifies one of the OCV personnel (i.e., Animal Technician, Manager, and the CV) so that the OCV can work with the Steam Plant for corrective actions.

The CV is also responsible for the oversight of international, interstate, or on-campus importing/exporting of animals. For the importation of animals, the CV reviews health reports of incoming animals to ensure disease-free status, directs quarantines and conducts testing for diseases prior to release animals from quarantine. For the exportation of animals, the CV conducts physical examination or inspection of animals and issues health certificates.

As the CV is ultimately responsible for all the activities in the campus Vivaria and in the office, the CV conducts performance monitoring, development, discipline, and any other actions as necessary as a director of the OCV. The CV ensures all animal care staff underwent necessary training, such as N-95 respirator fit-testing, rabies vaccinations/titers, occupational health and safety program enrollment, etc.

The CV prepares the program description for maintaining accreditation by AAALAC International and coordinates site visits.

The CV must be familiar with applicable state veterinary acts, inclusive of licensure requirements, particularly in the discharging of certain official duties such as signing international and interstate health certificates or verifying rabies vaccination or tuberculosis status of animals. To stay current on laws, regulations, and guidelines, the CV participates in
continuing education opportunities including small animal continuing education courses and literature pertaining to laboratory animals; laboratory animal related conferences and meeting, specialty practice conferences and research related lectures and literature.

The CV also participates in UC Veterinary Directors’ meetings and conference calls as organized by UCOP.

As appointed as an ad hoc specialist by AAALAC International, the CV conducts site visits to the other research facilities.

4.4 RESEARCH INTEGRITY

The research integrity infrastructure is comprised significantly of regulatory oversight committees.

- Human Research Review Board (HRRB): The charge of the IRB is to protect the health, safety and welfare of human subjects in research. The board is divided into Social/Behavioral and Clinical panels.
- Institutional Animal Care and Use Committee (IACUC): The charge of the IACUC is to assure animal welfare within the constraints of scientifically valid research.
- Institutional Biosafety Committee (IBC): The charge of the IBC is to protect the health and safety of researchers and the environment.
- Stem Cell Oversight Committee (SCRO): The charge of the SCRO is to provide ethical oversight of the use of human pluripotent cells.
- Promoting Objectivity in Research (COI): The charge of the COI is to promote research objectivity by assuring that contracts, grants and licenses involving UCR investigators comply with funding agency policies, federal and state laws, and UC policies on financial interest.
- Institutional Review Entity (IRE): The charge of the IRE is to establish and implement internal policies and practices that allow for the identification and oversite of the Dual Use Research of Concern Policy (DURC), and the review of proposed research that will utilize a DURC agent.

In order to do this, the committees are tasked with following federal, state, and local laws, regulations, and guidance. Ultimately, the execution of these charges relies on the knowledge and application of these guidance, such as educating a researcher about the regulations or providing a robust protocol review by determining all of the required elements are present before protocol approval.

Protocol Review Process: A new submission is evaluated as follows: the submission includes a protocol, and possibly includes supporting documents such as: IRB - grant, consent form(s), assent form(s), parental permission form(s), recruitment materials, questionnaires, surveys; IACUC - Standard Operating Procedures, owner consent forms; IBC - Exposure Control Plan, Standard Operating Procedures; SCRO - Banking and Distribution Plan, consent form.

- The submission and all documentation is deemed to be complete by ORI staff.
- The appropriate review procedure is identified. For example, for IRB, the research project is determined to be minimal risk or greater than minimal risk, and determined to qualify for exempt, expedited (i.e., the number of reviewers is less than full review, but does NOT convey the speed at which approval may be granted) or full (scheduled to
meet monthly and a quorum is required; materials due approx. 1 month prior to scheduled meeting) review. Special circumstances, such as vulnerable populations or international research, are identified for appropriate review.

- The committee determination is made: research may be approved, deferred for revision, or disapproved. The committees may also determine the frequency at which the continuing review will occur and whether post approval monitoring will be required.
- Projects may require review and approval by multiple committees, as well as external agencies. ORI is responsible for ensuring required order of approval is observed. For example, IRB approval may be contingent upon other UCR committee approvals, such as EH&S, COI, IBC, as well as other approvals such as FDA.
- The determination is communicated to the researcher in a timely fashion.
- The committees must also review any modifications, closures, protocol deviations and noncompliance. After any of these reports have been deemed complete by the ORI staff, the appropriate determinations will be made following a similar process as when a new submission have been received.

Meeting Organization
HRRB, IACUC, IBC, COI meet monthly; SCRO semi-annually. Meeting preparation includes:
- Agenda (includes protocols/amendments for review) and minutes (monthly)
- Inspection reports (IACUC – semiannually)
- Policies drafts/revisions, form draft/revision, non-compliance reports, SOPs, committee member training (as needed)

Congruence reviews
During SPA processing of awards, grants involving regulatory oversight are directed to ORI for review. Following notification, ORI staff compare the grant and protocol to ensure all activities requiring review have received approval. PIs are notified of any oversight and assistance is provided as needed in correcting the omission (via amendment or protocol submission). ORI completes the compliance processing of award as soon as compliance is complete.

Regulatory Agency Obligations & Accreditation Maintenance:

Annual Reports:
USDA December 1
OLAW January 30
AAALAC January 30
CDPH August 1
OBA – rotating based on last update involving new membership
AAHRPP March 1

Inspections/Site Visits
USDA – unannounced, 1-5 per year
AAALAC – 3 year intervals
AAHRPP – 5 year intervals

Registration/Assurance/Accreditation
USDA – 3 year intervals
OLAW – 4 year intervals
AAALAC – 3 year intervals
AAHRPP – 5 year intervals

Inspections (IACUC – animal housing, surgical and additional specified locations)
- Committee member and PI schedules must be coordinated.
- ORI facilitates the inspections (guides the subcommittees and records their findings).
- ORI then drafts the report for committee review.
- Following committee approval of the report, ORI obtains VC-RED review and approval of the report.

Training (IRB)
Campus education and public outreach activities are scheduled and implemented in coordination with by faculty/departments and required by regulation.

Training and Occupational Health (IACUC)
- The PI submits a Personnel Add Form, requesting training and occupational health review so that a new individual can begin working with vertebrate animals.
- ORI provides access to training and instructions on completing the training.
- ORI facilitates the occupational health review and interfaces with Disability Management (employees) and Student Special Services (students) to resolve clearance issues.
- When the trainee has completed all required activities and the occupational health review is approved, ORI notifies the individual and PI of the clearance to use animals and Office of the Campus Veterinarian access requirements.

Public Records Requests
Response time for Public Records Requests is defined by legal requirements, but is further limited by the needs of coordinating offices. ORI assesses Public Records Requests and compiles requested documents by the due date set by the Office of the Campus Counsel or other UC entity facilitating the request.

4.5 Corporate and Strategic Partnerships

Corporate Outreach
Work with new and existing corporate partners to increase engagement with UCR with an emphasis on sponsored research, gifts, student internships and recruitment, and service on advisory boards.

We will do this by:
- Providing concierge services (CSP team efficiently helps companies identify areas of mutual interest and then facilitates access to specific areas of research, recruiting, internships, licensing, etc.)
- Creating Awareness of Academic Programs & Offerings (update website, create research summaries for a corporate audience, campus visits, reach out to corporate representatives at UIDP)
- Preparing personalized materials for each company highlighting the value-proposition of partnering with UCR

Corporate Collaborations
• Work with faculty, corporate representatives, sponsored research, and technology commercialization to develop and structure mutually-beneficial collaborations and partnerships
• Monitor collaborations, insure regular communication is occurring, and address challenges as soon as they arise.
• Regularly provide the company with information about UCR successes and new opportunities to engage

Campus-wide corporate coordination
• Serve as campus corporate relations expert and coordinate campus wide corporate efforts
• Organize bi-weekly Corporate Council meetings (campus-wide staff who work with companies)
• Attend quarterly Development meetings and meet with AVC-Development quarterly
• Attend monthly Strategic Communications meetings

Services for Faculty
• Advise faculty on best practices for interacting with industry
• Organize faculty visits to industry both on and off campus
• Prepare faculty to for corporate visits on or off campus (when possible, review slides first)
• Assist with corporate proposals, particularly the scope of work and the budget
• Lead training session as part of RED series
• Work with Centers to develop its new corporate affiliates program
• Participate in the planning stages of new centers and initiatives in order to build in a structure that is appealing to industry from the very beginning.

Work with campus administration and leaders to enhance corporate relationships
• If possible, find out when the Chancellor will be interacting with industry leaders and prepare him accordingly (Davos, Aspen Institute, etc.)
• Staff all VC-RED and Chancellor Corporate visits (strategy, briefings, follow-up)
• Work with leadership and across schools to translate and shape complex research projects and University priorities into compelling proposals

4.6 Economic Development/New Ventures

New Ventures assists with company formation strategies and provide extensive support advising and mentoring early stage companies. This will include supporting the growth of companies being created within the University by faculty and staff.

Identify early stage companies within the University with high potential by building and managing a pipeline of companies

They will provide general support relating to patent and copyright process as it relates to early-stage technical inventions and depth of knowledge related to general business principles including marketing, financial planning, and business development.
5.0 **Incremental Services Provided**

Below are a list of incremental services provided, not included in the core service allocation. If you are interested in these services and rates, please contact Office of Research.

5.1 **Central Facility for Advanced Microscopy and Microanalysis (CFAMM)**

CFAMM is a research, service, and consulting laboratory for microscopic characterization of organic and inorganic materials, biological tissue and minerals applying electron beam techniques. The facility utilizes state-of-the-art equipment and its personnel conducts research and provides collaborative assistance, training and service to faculty, staff, and students at UC Riverside as well as to clients in industry, government, and academia.

**Service**
- Provide Critical-Point-Drying (CPD)
- Provide Operator Assistance
- Provide Sample Preparation
- Provide Sputtering 108Auto
- Provide Training / Consultation
- Provide Ultramicrotome
- Provide Vacuum Evaporation
- Provide Lapping/polishing/cutting
- Provide Diamond Saw
- Provide Dimpler
- Provide Fullam Carbon Coater
- Provide Ion Milling
- Provide Syton Polishing
- Provide Tripod Polisher
- Provide Ultrasonic Cutter

**Operation**
- Provide TEM CM300
- Provide SEM XL30
- Provide SEM NNS450
- Provide TEM Tecnai12
- Provide Advanced Support/Consultation

**General**
- Perform collaborative Research
- Develop/implement research methods for SEM imaging and analysis
- Develop/implement research methods for TEM imaging and analysis
- Develop/implement research methods for EDX analysis of bulk specimens
- Develop/implement research methods for EDX analysis of thin specimens
- Provide routine maintenance of microscopes/equipment
- Provide system administration of CFAMM computers
- Develop, maintain and upgrade facility website
- Establish/enforce facility policies and procedures
- Develop, establish, enforce facility recharge policies and fees
- Establish, develop, maintain facility safety protocols
- Develop standard operating instructions for all facility equipment
- Develop training procedures
- Negotiate with vendors and enforce equipment maintenance contracts
- Teach classes in electron microscopy techniques
- Support teaching activities utilizing EM techniques
- Create written reports to clients
- Provide methodological support and expertise in EM to CFAMM users
- Specify and request purchase of chemicals, consumables and equipment
- Research or determine through experience or experimentation appropriate sample preparation techniques for various applications.
- Prepare specimens for transmission electron microscopy including suspensions techniques, ion milling, cutting and mechanical polishing, fixation, dehydration, embedding, sectioning, attaining, negative staining, immuno labeling, critical point drying, and any other techniques required.
- Prepare specimens for scanning electron microscopy including coating, thinning, polishing, fixation, dehydration, critical point drying and any other related techniques.
- Perform specialized photomicrography techniques and digital imaging processing.
- Perform operational maintenance and alignment of microscopes.
- Routine maintenance of the microscopes and all ancillary equipment.
- Maintain a clean and safe working environment in all areas of the laboratory.
- Maintain inventory of laboratory supplies and equipment
- Prepare chemical reagents and maintain chemical inventory
- Manage chemical, biohazard and radioactive waste
- Provide collaborative EM research support to external research grants

5.2 CAMPUS VIVARIA

The UC Riverside Office of Campus Veterinarian (OCV) oversees all animal facilities (Campus Vivaria) at the University of California, Riverside (UCR). The laboratory animal care and use program at UC Riverside complies with federal, state, and local guidelines for laboratory animal care.

Animal Husbandry
- Feed animals
- Watering animals
- Change cages & bedding
- Change water bottle
- Change lids
- Change micro-isolator top
- * Breed/wean animals
- Check animal health

Facility Maintenance & Sanitation
- Sanitize floors
- Sanitize sinks
- Sanitize counters
- Sanitize walls
- Sanitize ceilings
- Sanitize light fixtures
- Sanitize drains
- Clean ventilated racks and intake / outtake vents
- Dispose waste
- Perform laundry
- Maintain equipment

**Animal Health & Technical Assistance**
- Dispose animals
- * Consult students
- * Sacrifice animals
- * Provide Medications, injections, treatments
- * Provide technical assistance

**Cage Maintenance**
- Wash cages
- Maintain micro-isolator tops
- Maintain racks
- Wash water bottles
- Wash lids

**Administrative**
- Conduct, enter, and send Per Diem Counts
- Purchase animal
- Submit animal order
- Test sentinel
- Submit works orders
- Contacting departments
- * Import/export animals (transfer)
- * Provide new set-up
- * Travel to pick up animals

**Veterinary Services**
- * Medication, Injections, Treatments, Surgery, Anesthesia and Analgesia, Surgery and Postoperative Care
- * Consulting (Investigator, Students)

*Charged as separate services on an as needed bases.

**6.0 Out of Scope Departments**

Below is a listing of departments that are not covered by this agreement. This includes departments where one off service level agreements may exists.
7.0 AREAS FOR POTENTIAL OUTSOURCING

[This section will be used as a placeholder to reference services that are allowable for outsourcing. This will be dependent on decisions made in conjunction with the governance committee and the service provider.]

8.0 GOVERNANCE

[This section will be used as a placeholder to reference governance policies as determined by governance committee. This will include policies to govern modifications and updates to the service level agreement, ownership and contact information for agreement.]

9.0 KEY PERFORMANCE INDICATORS

[This section will be used as a placeholder for UCR to set Key Performance Indicator for the service area.]

Signatures

We have read the attached contract and terms and hereby forge an agreement according to the conditions stated therein:

________________________________________  Date
Business Unit Representative

________________________________________  Date
Service Provider Representative

________________________________________  Date
Vice Chancellor