While public funding through the grant process remains the largest source of support for research programs at UC Davis and other leading research institutions, private sector funding from industry sponsors may require additional review by the UC.

The first step in the technology transfer process is to disclose the invention to the UC by submitting a Record of Invention (ROI) to UC Davis InnovationAccess. Once submitted, the UC will determine if it is appropriate to file a patent application based on factors such as patentability, prior publications, commercial potential, and benefit to the public.

If deemed appropriate for patenting, the UC will then market the invention and potentially license it to the startup company. When licensing an invention the licensees should also make themselves aware of potential conflicts of interest, UC receipt of equity in the startup company, and inventor share of royalties.

Starting a company is well outside your scope of employment at UC Davis, but UC Davis does offer support services to faculty, researchers, and staff interested in becoming entrepreneurs, or generally increasing their involvement with the private sector.
I. Research Plan and Funding

Funding Sources
The researcher may develop a research plan and obtain funding through a number of sources that are generally either public or private.

Public funding through federal and state or local government agencies available through the grant process is by far the largest source of support for research programs at UC Davis and other leading research institutions. Because of the breadth of public funding sources and faculty familiarity with public funding, for more information, please visit Sponsored Programs or Interdisciplinary Research Support.

Private sector funding from industry sponsors is increasingly important to research universities, as competition for public funding sources increases. Private sector funds are available from both for-profit entities and private foundations.

Characteristics of Industry Sponsored Research
Unlike the federal research funding agencies, a private sponsor views research collaboration with the UC as a business arrangement. Typically the company expects something tangible in return for its research investment. In some cases, the company is simply seeking data or knowledge that it can use in its own research and development. In other cases it may want a clinical trial to prove efficacy of its therapeutic drugs, or a direct relationship with a certain researcher. But more often the company is seeking technology it can use to form the basis for a segment of its business growth. To that end, companies fund research projects in the hope that new technology emerges. The research contract affords the sponsor rights to prospective intellectual property arising from the research.

As part of the research collaboration, the sponsor may be offered an option or a license to an existing invention. This agreement is a legal contract with the UC and is separate from the research contract. The license agreement contains its own terms, which include a financial structure, and provides that the licensee meet certain diligence requirements toward the timely commercial development and marketing of products based on the invention. See also Step III: Licensing.

The UC retains ownership of the technology to meet its obligation to disseminate new technology for the public benefit by ensuring diligent commercialization, as well as to ensure UC Davis’s researchers freedom to continue their research in their chosen fields. When the UC negotiates a new research contract with a sponsor who is also a licensee under a prior license agreement with the UC, funding of the new research can be part of the diligence the company must perform under the prior license agreement.

Forms of Industry Sponsorship
Industry-sponsored research can be supported either by an individual company or by a consortium in a variety of ways:

- Research contracts define a scope of work carried out solely by UC Davis (possibly with subcontractors) and may provide sponsor access to resulting inventions and research results made within the project scope and term. Collaborative research contracts involving a company and UC Davis scientists include mutual obligations, and sharing of data, facilities and materials. For inventions resulting from such collaborations, joint inventorship between UC Davis scientists and company scientists may result in joint ownership of patent rights by the UC and the company, so long as the company scientists do not use UC facilities or resources in making their contribution to the invention.
- Clinical trials involve testing of sponsor-owned drugs or devices using the sponsor’s protocol, with rights to results and often technology improvements accruing to the sponsor.
- Gifts are irrevocable donations to general or specific areas of campus activity that, under IRS regulations, must not carry no obligations for deliverables or rights to results, although UC Davis may provide a courtesy report to the sponsor indicating what was accomplished with the funds.

Leadership of Research Projects
Each industry-sponsored project is led by a UC principal investigator (PI) who guides the research, shapes the resulting technology, and is responsible for the scientific coordination with the sponsoring company. The PI and department chair are also responsible for ensuring that the project and its employees comply with all applicable UC policies and procedures, such as the Disclosure of Financial Interest in Private Sponsors of Research.

Project Funding
UC policy requires that a corporate sponsor reimburse the full costs of industry-sponsored research (direct and indirect costs, including salaries and benefits as appropriate) in order to secure the right to negotiate an exclusive license to any inventions made in the course of the project. Indirect costs are not charged on equipment, patient care costs, certain student fees, or sub-contract amounts over $25,000. Clinical trial projects are assessed a special indirect cost rate. These research and development investments may qualify as tax credits to the sponsoring company. Therefore, in communicating with potential sponsors about research costs, it is important to point out that research costs must include full direct and indirect costs for the company to be assured of exclusive access to resulting technology.

Indirect Cost Recovery is Required
When research is sponsored by a private industry through a contractual arrangement, direct and indirect costs must be covered in order to secure the right to negotiate a license to any inventions made in the course of the project. The indirect costs cover the facilities and administrative costs associated with each project. The rates are set by an agreement between the UC and the federal government, and are based on the type of activity being supported (research, training, or other sponsored activities) and where the research is being done (on- or off-campus). The rates used are the same as those negotiated by UC Davis with the federal government.

Accepting simultaneous research funding during the same or overlapping time frames from multiple industry sponsors in the same or similar research area should be avoided if possible. Overlapping private sponsorships may lead to legal problems relating to proprietary information and intellectual property rights.

If there are multiple sponsors for one laboratory, it is important that the scope of work of each research contract be clearly defined and that expenses under each contract not be co-mingled (separate accounts must be established). That way, any inventions arising from
activities in any laboratory can be clearly attributed to the correct sponsor. Detailed laboratory notebooks must be kept up to date and should be associated with the appropriate contract exclusively. Although this may seem an added administrative burden, it is important to avoid any potential disputes between industrial sponsors and the UC. Such disputes can carry significant legal liability on the UC's part.

**Negotiation, Review and Approval of Industry-Sponsored Research Agreements**

Agreements with UC Davis go through the following review and approval process:

- Sponsored and collaborative research agreements are reviewed and negotiated for compliance with UC policy, and accepted on behalf of The Regents and signed by the UC Davis Office of Sponsored Programs.
- Exceptions to UC policy must be approved by the UC Office of the President.
- Research projects are subject to applicable clearance by Animal and Human Subjects Committees, as well as the Conflict of Interest Committee for projects where the faculty member has a financial interest in the sponsor. See Step VI: New Company Funding of Research at UC Davis, for a discussion of conflict of interest.
- For industry partnerships involving complex intellectual property provisions, Sponsored Programs and InnovationAccess collaborate in negotiations and communications with the industry partner.
- Important principles that apply to any UC agreement include: the UC's right to publication and dissemination of the results; accessibility of results for UC purposes; public benefit; informed participation; legal integrity; protecting student involvement; fair economic value for public assets; and objective decision-making. See Principles Regarding Rights to Future Research Results in University Agreements with External Parties.

**Public/Private Partnership Funding**

Certain funding sources that seek to foster university-industry collaborations are particularly appropriate for UC research arrangements involving outside companies, e.g., the Small Business Technology Transfer Program at the federal level (STTR) and the UC Discovery Grant Program at the California state level, also known as the Industry-university Cooperative Research Program (IUCRP), a UC-wide matching grants program established to increase research interactions and technology transfer between individual UC researchers and California businesses. IUCRP, through peer review and approval, provides matching funds equal to the company's investment in the research collaboration. Indirect costs are charged only on the company share, and the UC absorbs indirect costs associated with the UC's investment in each project. Full intellectual property rights may be negotiated by the company, similar to projects for which the company sponsor provides full direct and indirect costs of the research. Matching grants are awarded by IUCRP in five areas: biotechnology, communications and networking, digital media, electronics manufacturing and new materials, and information technology for life sciences, as well as a multi-field research area, added to encourage broad interdisciplinary research. See also Step VI: Start-up Funding of Research at UC Davis with respect to SBIR/STTR federal funding sources.
II. Invention

So now the researcher makes an invention. Under the UC Patent Policy ("Patent Policy"), in general, the UC owns patent rights to the invention, subject to certain exceptions such as "permissive consulting." (See Step V.B: Consulting Guidance) The intellectual property management process is:

A. Disclosure of Invention to the UC

The researcher discloses the invention to the UC, as required by the Patent Policy, by submission of a Record of Invention (ROI) (see forms page) to UC Davis InnovationAccess. The UC Patent Policy requires that UC researchers disclose potentially patentable inventions to the UC. This requirement is covered in the Patent Acknowledgment, signed by all employees upon hiring and by other researchers using UC facilities or funding. The duty to disclose to the UC applies to all inventions generated by UC employees, as well as all inventions made using UC facilities or resources. Therefore UC employees have the obligation of disclosing all of their inventions, including those made under university-industry research collaborations, or made under consulting arrangements or other outside personal agreements. Potentially patentable inventions include any new or useful process, device or apparatus, article of manufacture, composition of matter (including chemical compounds and plants) and improvements to any of the foregoing, as well as new uses for known materials or devices.

If the inventions receive patent protection and are licensed to industry, any license and royalty income to the UC will be shared with the inventors in accordance with the Patent Policy. Disclosure of an invention to the UC is accomplished by submission of a completed (signed and witnessed) Record of Invention Form (ROI) (see forms page) to UC Davis InnovationAccess. The ROI provides information necessary for UC Davis to evaluate patentability, inventorship, assignment obligations, patent obligations to research sponsors, and commercial potential. The ROI should be kept confidential by the inventor. Researchers should disclose inventions to the UC in advance of making any public disclosure (e.g., paper, abstract, poster session, oral presentation, or discussion with outside colleagues) in order to give UC Davis the opportunity to preserve patent rights by making a patent filing prior to the public disclosure.

B. Patent Filing by UC

The UC files a patent application for the invention, if the UC determines it is appropriate to do so, following the UC's assessment of patentability and licensability of the invention. The patent filing may take place before or after marketing/licensing of the invention by the UC. (See Step III: Licensing.) The UC is responsible for patent filings for inventions made at the UC, based on the UC's ownership of such inventions. Under the UC Patent Policy, the UC owns the title to inventions or discoveries made in the course of UC employment, or with the use of UC research facilities, or with UC resources. With respect to federally funded inventions, the 1980 Bayh-Dole Act gives the UC the right to own and license inventions made under federal funding, provided that the licenses ensure certain government rights, and subject to reporting and certain other requirements.

UC employees, as a condition of their employment, and others using UC facilities or resources, as a condition of receiving permission to access and use such facilities or resources, contractually agree to disclose potentially patentable inventions to the UC (see also, above Step IIIA: Disclosure to UC) and, in general, to assign all rights to such inventions (and resulting patents) to the UC. In some consulting relationships, it may be permissible for assignment of an invention to be made to the outside company for which the researcher is consulting. In such a situation, the disclosure of the invention must, nonetheless, be made to the UC and this disclosure should be made prior to disclosure to the outside company so as to allow adequate opportunity for the UC to review the invention and to determine whether the UC is the owner of the invention. See also Step V.B: Consulting Guidance.

Upon receipt of an ROI, UC Davis InnovationAccess conducts a preliminary evaluation of the invention. Factors such as patentability, prior publications, commercial potential, and benefit to the public are considered in deciding to pursue patent protection. The cost of patent filing and prosecution, which may be tens of thousands of dollars for U. S. protection alone and may exceed a hundred thousand dollars for foreign protection, is an important consideration. Inventors are urged to keep the UC licensing professional assigned to the invention apprised of any action they are contemplating, especially any publications or other public disclosures, as such actions can significantly affect rights in the invention.

Depending on the outcome of the invention evaluation, UC Davis InnovationAccess may proceed to market the invention. The goals of marketing are to assess commercial interest in the invention and to find a qualified licensee. The faculty inventor is often the best source of information on companies whose business interest coincides with the field of the invention. UC Davis InnovationAccess also considers whether the invention could become the basis of a start-up company to which the UC could license invention rights. See also Step III: Licensing. If a decision to seek patent rights is made, the case is referred to an outside patent attorney to file a patent application on behalf of the UC.

Inventorship for a patent application is determined as a matter of law, based on contribution to the conception of the invention. Unlike authorship of publications, a person who contributes to the work on a project is not necessarily an inventor. For instance, a person who carries out the instructions of another in performing experiments, without more, is not an inventor. The inventorship determination is made by the outside patent attorney authorized by the UC to file the patent application. A patent may be unenforceable in the event of the omission of an inventor or the inclusion of a non-inventor. Joint inventorship occurs when two or more persons, working together, each contribute to the making of the invention.

C. Release of Invention Rights by UC

In certain circumstances, the Patent Policy allows the UC, if it decides not to pursue patent protection for an invention, to release the invention to the federal government, if federally funded, or directly to the inventor. (See UC Patent Policy, item B.) If an invention is released by the UC to the federal government funding agency, the inventor can request release of the invention from the agency. However, it's important to note that if an invention is released to the inventor, any further development of the invention by the inventor must be done off-campus without use of UC resources. Further inventions by the researcher, whether improvements of the released invention or otherwise, must be disclosed to the UC and are subject to the duty to assign to the UC.
III. Licensing

The UC markets the invention as appropriate. If warranted in view of all relevant considerations (including requirements of funding agreements and applicable law, marketing results, and ability of the start-up company to commercialize the invention), the UC may license the invention to the start-up company. Considerations include the following:

A. Conflict of Interest in Licensing

The UC inventor’s role in license negotiation is subject to Licensing Decision Review or LDR. Form TT-100, the Inventor / Author Statement Concerning Involvement in Licensing Decisions may be required. The LDR is required by the California Political Reform Act (Act), which establishes rules designed to ensure that public officials “perform their duties in an impartial manner, free from bias caused by their own financial interests or the financial interests of persons who have supported them.” The rules apply to public officials at all levels of government in California, including UC faculty.

In order to comply with the Act, the UC has developed policies for Managing Potential Conflicts of Interest in Licensing Under the California Political Reform Act, associated Guidelines on Managing Potential Conflicts of Interest in Licensing, and a guide to What Inventors Need to Know about Conflict of Interest in Licensing.

When a UC inventor has a disqualifying personal financial interest in a decision concerning a potential licensee of an invention, either

- that employee must disqualify himself or herself from “making, participating in making or influencing a university decision” concerning that invention, including selection of licensees and other decisions made in the course of commercializing the invention; or
- when that employee does not disqualify himself or herself from involvement in such decisions, a Licensing Decision Review of the licensee selection and of other licensing decisions must occur.

The inventor’s share of royalty income paid to a UC inventor by the UC relating to the licensing of his or her invention is not considered to be a disqualifying personal interest of the inventor in the licensee of that invention.

The Act will permit participation in negotiating, advising or making recommendations with respect to any UC decision, including those related to licensing, so long as there is appropriate review by non-interested persons or persons, which the Licensing Decision Review accomplishes.

B. UC Receipt of Equity in the Start-Up Company

The UC equity policies apply if the UC receives equity in consideration of licensing the invention to the start-up company. UC equity policies and guidelines generally state that in appropriate circumstances, the UC may accept equity as partial consideration for technology licensing. These policies are in place in recognition that small or start-up companies may find it particularly difficult to commit significant cash outlays for both developmental and licensing costs. In such cases the UC may accept equity, in lieu of cash, for license fees. When accepting equity, the UC seeks to hold a position of 10% ownership or less in a licensee at the time that the licensee becomes a publicly traded company. The UC will not hold a position on the board of directors, and will not exercise voting rights, but may exercise observer rights on the board of directors.

C. Inventor Share of Royalties

The UC inventor receives a share of the net royalties and fees from licensing, in accordance with the Patent Policy. Equity received by the UC in consideration of licensing the invention is also shared with inventors using the same formula for royalty sharing.

In compliance with the UC Patent Policy, the UC inventor receives a share of the net royalties and fees from licensing under a defined formula. The formula and process are in the UC Patent Policy. Payments to inventors are made each year in November based on the preceding fiscal year income, expense, and reimbursement.

Non-inventors who make substantial, but not inventive, contributions to an invention can be included in the benefits of royalty income that the UC receives, if the inventors so agree. The UC will honor a written agreement among all of the inventors that sets forth the formula for the distribution of royalty payments. Additional recipients under such royalty-sharing agreements may also be UC research programs or other institutions. Such royalty-sharing agreements must be signed by all of the inventors.
IV. Starting a Company

A. Starting a Company

The decision to start a company is fundamentally outside the scope of any faculty member’s employment with the UC but can significantly impact the mission of the UC in supporting technology transfer and regional economic development. UC Davis provides limited support services to faculty, researchers, and staff interested in becoming entrepreneurs, or in increasing their involvement with the private sector more generally. These services are available through UC Davis InnovationAccess and other campus units such as the Graduate School of Management and the Child Center for Entrepreneurship; the UC’s interest in offering these services is rooted primarily in the economic development strategy contained in UC Davis’ Vision 2020 strategic plan.

B. Considerations in Forming the Company

Considerations in starting a new company include business plan development, financing (government funding, venture capital funding, angel funding, and other private funding), employee personnel/human resources, site location, facilities, product development/marketing, outside advisors (e.g., legal, intellectual property, financial) and in-licensing of technology (see Step III: Licensing).

Stage 1: Validate the business objective and model.

Without a business model, new technologies may never realize their commercial potential. A business model summarizes how a company intends to serve its customers, and integrates both strategy and implementation. It answers fundamental questions such as:

- What unmet need does the business solution provide?
- How will the solution be delivered to the end-user?
- How large is the addressable market?
- How will the company make money?

Some online resources

Stage 2: Develop a business plan.

A business plan is the single document containing a company’s statement of strategy and objectives, and sets out the operations with which the company will meet its objectives. Business plans also contain financial projections, a market analysis and discussion of marketing strategy, and a review of key personnel leading the company. For companies involved in attracting funding, a business plan is the key sales document that will persuade others of the potential that the business embodies. UC Davis InnovationAccess cannot write the business plans for faculty entrepreneurs but the group will assist the company to identify the resources needed to pull together a persuasive and professional business plan.

Stage 3: Set up a legal entity for a new business.

There are a number of legal alternatives for creating a new company including corporations, limited liability companies, and limited partnerships. UC Davis InnovationAccess recommends that faculty entrepreneurs work with outside legal counsel to choose the proper legal form and to create the new company. While it is possible to form a company without legal advice, and numerous resources exist online to assist with this, securing outside legal advice and establishing a relationship for the company’s future needs is advised.

Stage 4: Bring business management expertise to the company.

The next stage is to bring in associates with sector-specific business expertise. Business expertise is necessary for two critical steps: financing the company, and negotiating the intellectual property license. It is not necessary to actually hire someone to join the company for this purpose — many businesses begin life with mentors, consultants, or others working for equity positions or options.

Stage 5: Negotiate intellectual property license(s).

The University of California owns certain intellectual property as stated in the UC Patent Policy, to which faculty members agree by signing the Patent Acknowledgment form as a necessary condition of their employment. Therefore, the new company will need to license UC Technology from the UC in order to be able to commercialize it. See also Step III: Licensing. UC Davis InnovationAccess does all technology licensing for the Davis campus. The Intellectual Property Licensing Officer who handles the Record of Invention and the patent application will normally be responsible for licensing the technology to the new company. See also Step III: Licensing.

UC Davis takes issues of conflict of commitment and conflict of interest very seriously. See Step III A: Licensing Decision Review and Step VI: Start-up Funding of UC Davis Research. During license negotiations, conflicts of interest can arise where a faculty member participates in the negotiations on behalf of a company with which he or she is also involved. For this reason, UC Davis recommends that a representative of the company other than the faculty entrepreneur lead the licensing process.

Stage 6: Establish a location for the business.

Generally speaking, companies are not permitted to co-locate on UC property. However, space for small companies can be difficult to come by, particularly in the Davis area, and particularly where lab space is needed as well. UC Davis InnovationAccess has an established network of referrals to assist in finding space near UC Davis, whether in regional incubators or in traditional office or lab-office real estate, including opportunities to sublet where possible.

Stage 7: Develop a funding strategy.

Financing strategies differ from company to company based on many factors, including the company’s stage of development or maturity, its industry sector, and its financial needs, among others. Funding sources include grants from the government or private foundations; equity such as angel or venture capital funding; and debt from government agencies like the Small Business Administration (SBA), from banks, or from personal credit cards.

Stage 8: Develop a financing pitch for equity investors (if needed) and secure financing.

If the funding strategy anticipates equity investment, the company will need to begin work on the “pitch”, or the story used to describe the product concept, the company itself and its long-term potential to investors. Typically a pitch is prepared in varying lengths, from the “elevator pitch” (to be delivered in the space of a happenstance elevator ride with an investor), to a full-blown talk complete with...
presentation. The pitch is formulaic in terms of the material it is expected to communicate about the company, but also needs to be vivid, to make an impression, and to be delivered with passion.

Stage 9: Begin product development. Finally, all the key pieces will be in place for the company’s operations to begin. Whether it is commercializing a software product in the short-term, or engaging in drug development in the long-term, product development is the foundation of the company’s future success, and raises its own operational challenges.