Ethical and Professional Science
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SIO 232
Week 5: Working with Industry

marineemlab.ucsd.edu/~ethics/

Discussion and questions are encouraged but no naming of names, please.
When there is Money involved:

photo by Kerry Key
University Industry Relationships (UIRs)

• Contribute to the economic development of the state and nation.

• Expand the utilization of University research and intellectual property.

• Provide students with enhanced educational and research opportunities.

• Provide areas of mutually beneficial collaboration in societally relevant research areas.

• Enhance the University’s reputation as a valuable member of the community.

• Help support research financially.
Examples of UIRs:

• Material transfers.
• Technology licenses.
• Sponsored research agreements.
• Student internships
• Use of industry data
• Spin-off companies.
• Use of university facilities.
• Consulting agreements.
SIO funding from private research contracts:

2014/15 UCSD private contracts and grants = $220M
By its nature, an industrial company’s objective in funding research is to improve the profitability of the company. This may be compatible with the education and research objectives of the University, or it may not be.

If set up properly, UIRs are a win-win for the company and University. If not...

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**Report: Five-year deal with Novartis hurt UC Berkeley**

By Edie Lau -- Bee Science Writer

Published Sunday, Aug. 1, 2004

A $25 million, five-year research deal between plant biologists at UC Berkeley and the biotechnology company Novartis was a costly experiment that should not be repeated, outside reviewers conclude in a report being released today.

The reviewers, from Michigan State University's Institute for Food and Agricultural Standards, found that damage done to the University of California's premier research campus, from campus infighting to a tarnished reputation, simply wasn't worth the money.
Guiding principles:

• Traditional conflict of interest situations should be disclosed and ideally avoided.

• Research should be appropriate to the University.

• The teaching and research environment should remain free and open.

• Freedom to publish and to disseminate research results should be preserved.

• Licensing agreements should be thoroughly reviewed.

• University facilities and resources should be used appropriately.
Conflicts: Conflict of interest

arises when your work or decisions within the University financially benefit you outside the University, or benefit your relatives.

e.g. Steering a purchase order to a family company. Licensing University software to a company you own part of. Requiring a graduate student to work on a project that would benefit such a company.

Conflicts of interest are not automatically bad, but they need to be declared and ‘managed’ (we have a COI office on campus).

In the context of industry, it is financial conflict of interest that attracts most attention, but other COI can also occur, such as those we have discussed in the review process.
Conflicts: Conflict of interest:

UC has definitions of ‘significant financial interest’ which require disclosure, when you or your immediate family:

i) receive an annual income of > $10,000 from a company, or

ii) hold an equity interest of > 5% or > $10,000 in a company, or

iii) have a management responsibility in a company (i.e. voting or decision making).

These standards are applied when research funding is sought from a company, subcontracts are let to a company, or a grad student/postdoc is employed by a company.

Usually, a COI is ‘managed’, rather than totally avoided. In the history of UCSD, only 2 contracts have been denied as a result of unmanageable COI (I am told).
Conflicts: Conflict of commitment

occurs when time spent on outside activities such as consulting or running a business interferes with your University obligations.

UC time limits on consulting for faculty and researchers is generous - one day per week for ‘outside professional activities’.

This could include traditional consulting, sitting on boards, outside teaching engagements, etc.
....an outside activity that interferes with successful performance of the faculty member’s University obligations represents a conflict of commitment.

The University sees great value in activities outside the University that advance and communicate knowledge through interaction with industry,....

Although professors may follow subsidiary interests, these interests must never seriously hamper or compromise their freedom of inquiry.

A full-time faculty member on a fiscal-year appointment may engage in compensated outside professional activities for up to 48 days during the months of active service.

Part-time involvement of students in the outside professional activities of a faculty member may, under certain conditions, offer the potential for substantial benefit to the education of the student. Before involving a student in an outside professional activity in which the faculty member has a financial interest, the faculty member must obtain prior written approval....
Consulting: Steve’s rules of thumb:

Faculty and students alike labor in the University for less pay than in industry because the hours are flexible and the work is fun. Consulting can be fun, but the primary contract is for money. Make sure there is enough money in the agreement that if things turn sour (they can) you at least make enough money to compensate you for your time.

One reasonable estimate is at least twice your gross income; this is roughly what it would cost to engage your services through the University after benefits and overhead.

You may have to sign “non-disclosure agreements” (NDA’s). These mainly pertain to keeping industry information confidential, but many attempt to assign patent rights to the company paying you to consult. This is in conflict with your University contract and you should not do this (unless the field of activity is clearly outside your University work, i.e. not geophysics in my case).
A sensor for electric field measurement at the floor of a body of water has at least one pair of square or rectangular electrodes (139, 140) with a known area positioned in parallel separated by a distance and connected by a resistor (120) having a value that matches the resistance of the water between the electrodes. The detected electric fields may be naturally-occurring or artificially generated using a controlled electromagnetic (EM) source. In a preferred embodiment, three pairs of square or rectangular parallel electrodes (139-144) are arranged to form the six sides of a rectangular prism or cube, thus providing for electric field measurement along three axes to provide horizontal and vertical measurements of a hydrocarbon reservoir or other feature of interest under the floor of the body of water.

14 Claims, 4 Drawing Sheets
Patents:

The concept of a patent is a mechanism to protect someone’s ideas from exploitation by others in return for putting it in the public domain - a patent application has to provide enough detail that someone else could build the widget, make a process work, etc.

Compare this to a trade secret, where you protect your intellectual property (IP) by simply keeping it a secret from the world forever. In the USA, generally speaking, patents filed before June 8 1995 expire after 17 years, and patents filed after that date expire after 20 years. At that point the ideas go into the public domain.

Research contracts funded by industry usually provide the sponsor with rights to license any patentable ideas that come out of the work. Sometimes the contracts provide the sponsor with the right to review papers before submission for publication in order to determine if patentable ideas exist.
The Bayh-Dole Act:

In the 1960/70s, a major concern was the lack of success by the federal government in promoting the adoption of new technologies by industry. The government would not relinquish ownership of federally funded inventions to the inventing organization. Instead, the government retained title and made these inventions available through non-exclusive licenses to anyone who wanted to use them.

As a result, companies did not have exclusive rights under government patents to manufacture and sell resulting products. Understandably, companies were reluctant to invest in and develop new products if competitors could also acquire licenses and then manufacture and sell the same products.

In 1980, however, legislators and the administration concluded that the public would benefit from a policy that permitted universities to elect ownership of inventions made under federal funding and to become directly involved in the commercialization process. It was understood that stimulation of the U.S. economy would occur through the licensing of new inventions from universities to businesses that would, in turn, manufacture the resulting products in the U.S.
UC policies on patents.

By the terms of employment contracts, the University owns the intellectual property generated by any of its employees in their area of research. This is not unusual - companies do the same.

The consequence of the Bayh-Dole act is that universities have an obligation to patent potentially licensable ideas. Industry often sponsors research with the expectation that patentable ideas will indeed be patented and licensed to the sponsor. These obligations are passed down to researchers, who have an obligation to disclose potentially patentable ideas. Researchers here means everyone: faculty, researchers, students, postdocs, even visitors and volunteers.

Because ideas tend to be a result of accumulated experience, and the exact eureka moment is usually undefinable, UC employees cannot re-assign patent rights as part of consulting agreements.

Ostensibly, UC’s goal in patenting and licensing is not to make money, but to benefit society by getting ideas developed in the commercial environment. Unlike most of industry, UC’s royalty sharing policies are generous - about 50% of the proceeds are given to the inventors.
The University’s intellectual property should be protected.

If a visitor comes to your lab, sees what you are doing, and then goes away and patents it, it is clearly not ethical, but may be legal.

Putting ideas into the public domain discourages this, but don’t forget your obligation to disclose patentable ideas to Tech Transfer. They WON’T prevent you publishing - they just want time to file a preliminary patent (about a month).
Internships

Internships provide students with an opportunity to gain the experience of working within industry. For some companies, they are a required path to employment. They often pay very well (a leave of absence from your research fellowship position may be appropriate).

Be aware that the work you do for a company as part of an internship may be held confidential to that company, and so won’t contribute to your thesis directly. However, knowledge and experience gained may help you in your thesis work. Usually, the time taken to do internships will add to your time to graduation.
Copyright:

A copyright does not protect ideas, but does protect words, images, software from being used by others, for profit or otherwise.

Researchers generate copyrighted material all the time. Journal articles are copyright, which may be assigned to the journal or retained by the author. (This may be negotiable - some entities encourage you to try to keep the rights to post on your own web pages.)

Software is copyright, and can also have commercial value. This can create conflicts in the academic world if a researcher wants to have code used by as many people as possible (generating impact) and a University wants to license the software (generating money).

Many academics like to release software under the GNU General Public License, which uses copyright terms to generate an inherited ability to keep modified code in the public domain.
University facilities:

It is not appropriate for you to use University facilities to engage in outside activities.

University facilities may be made available to industry if there is no commercially available equivalent.
When in doubt, let the University take care of the details:

Contracts and grants:

Preserves our rights in data, to publish, the handling of confidential data from sponsors, etc.

Technology transfer office:

Protects University’s intellectual property rights.

University employees have an obligation to disclose all potentially patentable ideas. The current royalty distribution for licensed products is quite generous.

Conflict of interest office:

Manages potential conflicts of interest. There are reporting requirements.