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California dreaming about slick technology transfer

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Industrialists are skeptical about any simple routes for streamlining technology transfer.

In January, California's Governor Gray Davis divulged plans to strengthen the state's biotechnology sector, notably by encouraging the smoother transfer of technology from the state's universities to industry. However, industry insiders are doubtful that there is any quick fix for the current bottlenecks in the process.

It is no surprise that the biomedical industry is high on the Governor's agenda. The golden state is home to 2,500 biotech companies, which employ 225,000 people and generate $7.8 billion annually in sales worldwide. Much of that corporate wealth has germinated in the fertile intellectual soil of the state's academic institutes. According to the University of California (UC; Oakland, CA) system, one in every three US biotechnology companies is located within 35 miles of one of the ten UC campuses.

California's plan to standardize technology transfer agreements may be a pipe dream.

Nevertheless, Davis hopes that the state can do better. While Davis' plan does not yet appear to have any specific details, his outline includes standardizing the licensing process, presumably with a pro forma agreement that would be used for all technology transfers. But can the tricky transfer of technology from academia to industry become a routine process?

The beauty of biotechnology—its sheer diversity—would itself render a contract template obsolete, argues Jasper Schaible, director of corporate development at Ligand Pharmaceuticals (San Diego, CA). Schaible points out that biotechnologies vary so greatly that each license needs to be customized. For example, the structure and terms of a license for a drug candidate is distinct from that for a drug development technology, and different again to that for a drug target. "Different customers have different needs [in a license]," says Schaible. For example, a large pharmaceutical firm may demand tighter control of the applications of a new technology than a start-up would.

Moreover, licensing professionals point to two additional problems—the tension between communication versus confidentiality, and handling unrealistic expectations of academics—that often impede the technology transfer process.

Peng Leong, senior licensing associate in business development for Chiron (Emeryville, CA), appreciates academics' need for secrecy (for retaining competitiveness among their peer group) but argues "...more information can be shared before a confidentiality disclosure agreement (CDA) is put in place." (A CDA legally binds the recipient to keep the divulged information confidential, but is appropriate only when the proprietary nature of the information makes it commercially sensitive. A good first appreciation of a licensing opportunity can usually be conveyed with non-confidential information, and a CDA put in place later.) Without open communication, industry cannot easily browse for technologies, let alone evaluate them prior to deal making.

Even internal communication hiccups can kill deals, says Mark Enyedy, vice president of development at Vertex Pharmaceuticals (Cambridge, MA). The financial goals of a university technology transfer office (TTO) may not be aligned with the (more academic) aims of the researchers, stymieing deals

with external partners. "Here industry can play a constructive role in making sure that the objectives of all are aligned," says Enyedy. He advises having both research and business representatives from the company in the team that negotiates with the academic institute to ensure that everyone's needs are met and projects go according to plan.

Next, academic expectations may not match the needs and constraints of industry. For example, Leong says that academics often look for large upfront fees as alternatives to "research grants," whereas industry would prefer to defer much of the risk to medium- or long-term royalties. Some academics, especially those working in "hot" areas, and TTO staff new to the field, are particularly prone to overestimating the value of early-stage research. Schaible warns that industry can and will walk away, because "there are always other technologies out there."

Sponsored research, says Enyedy, would usually be tied to a "rights to first option," whereby a company can acquire any resulting intellectual property. Transparency from the outset is essential here, he says, with parties agreeing on acceptable ranges for upfront fees and clear criteria on which royalty rates will be decided. "It can work well if the TTO can establish its own benchmarks," says Enyedy, for example, what rates it would commonly charge for technologies in specific research areas.

Whether Governor Davis' aspirations can incorporate ways to encourage this mutual education process remain to be seen, but it does not look likely that a "standard operating procedure" will come to the rescue. Building relationships is paramount, and the winners will be the institutes and companies that can cultivate the best rapport and a healthy appreciation of each other's needs and restraints. The best partners strive to this end: Chiron has nurtured close ties with specific institutes, in particular Cancer Research Ventures, the business development unit of the UK's largest cancer charity; and Ligand's Schaible says that meetings of the local chapters of the licensing executive society (LES) have been a good "forum for fostering relationships [especially with local institutes]." But most importantly, says Enyedy, all parties must share a "commonality of interest in a common goal." And that is getting technology to the marketplace.