

***PRESENTATION:***

**BUILDING ECONOMY  
THROUGH TECHNOLOGY TRANSFER:  
UNIVERSITY OF WASHINGTON START-UPS**

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I would like to discuss how technology transfer has influenced economic development in the State of Washington and at the national level, and to show some examples of the University of Washington's start-up companies.

First, our mandate in the Office of Intellectual Property and Technology Transfer is to make the creativity of researchers available to the public, while protecting the academic mission and the public interest; thus, creating a link between academia and the public sectors. We believe we can only be successful in technology transfer by having many disclosures to evaluate. We encourage faculty by teaching them of the importance of technology transfer and of disclosing inventions to our office. We receive approximately one invention disclosure per day. Currently, we have over 2,500 disclosures under our management. We assess the patentability of the disclosures, seek patent protection – by working with a number of firms nationwide in order to get the best counsel possible – and then manage the intellectual property.

Much intellectual property is created through research agreements and collaboration agreements with the private sector. We try to facilitate this by reviewing such agreements and managing a number of other interactions with the private sector, through material transfer agreements, consulting agreements, participation agreements, or whatever sort of arrangement we might find to facilitate the process. We then negotiate the license agreements that result from the interactions. Not all intellectual property, however, comes from sponsored research. Therefore, we have to find licensees for everything else.

There are two approaches to licensing. Sometimes there is an obvious licensee in an established company to which we could license. Or, it may be possible to license to a start-up company. As a public institution that deals with state assets, we have to carefully evaluate licensing to start-up companies because of the risk and the time required to undertake such licensing activities. However, if the company is successful, then the benefits for the university, the state and the public are much greater. The University of Washington is not risk adverse and does favor actions with start-up companies.

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\* University of Washington Office of Intellectual Property and Technology Transfer.

What is a University of Washington start-up? We define it as university technology that is licensed to the company that built the core technology and the base of the technology. Sometimes, however, there is not yet patentable subject matter, in which case the university employees or students will leave the university and continue to form the company around their prior work.

Between 1969 and 2000, approximately 150 companies were founded on such technologies. Eighty percent are still active. We believe that is a good number of start-up companies. Many are in biotech targeting areas like autoimmune disease, Alzheimer's disease, and cancer research. Others involve software and medical devices. These start-up companies mostly focus on biotech, genomics, and software medical devices, as opposed to the more traditional markets like chemicals and agriculture. (Traditionally, industry in Washington has focused on natural resources, such as fishery, forestry, and agriculture.)

University of Washington start-up companies have strongly diversified the economic situation in the state. In 2000, over 7,000 direct jobs were created, and about 30,000 indirect jobs were created. A number of these companies had sales revenue in 1998, which jumped to \$4.5 billion in 2000. Most of these companies were software-related in one way or another. For biotech, it takes much longer to bring a product to the market. For example, it took fifteen years for Embro to reach the market, but when it did it was very successful.

The market capitalization of twelve publicly traded companies jumped in 2000 to \$25 billion. Most of these companies were in biotechnology.

Many of these companies have been the result of mergers and acquisitions. Because these companies are very successful they get attention nationally and internationally. You have heard about ZymoGenetics, but there are a number of others. Rosetta was just acquired by Merck last year. The very successful company Teva Pharmaceuticals was acquired by Philips.

Almost 90% of these companies stay in the area, so the benefits for the state are not lost. This is because there are strong ongoing relationships between the companies and the University of Washington's research agreements. The companies still have access to the ongoing research; that accounts a lot for their success. It would be counterproductive to move the companies out of the state. We believe that the excellent work housed at the University contributes to the success, but we also need entrepreneurial faculty members who are willing to take risks and go outside and start companies. Our office of Intellectual Property and Technology Transfer facilitates these activities.

We have 150 start-up companies in the state; in comparison, the University of California – a system that has nine campuses, three national labs, and five medical schools – has about 96 start-up companies in-state. The difference is a matter of policy. The University of California does not like to take as much risk as we do, favoring established companies where it is more certain that the product will be developed because there is in-house expertise. We like to work with start-up companies even though they might not make it. As a result, we build links among the entrepreneurs, inventors, the University of Washington, our office and venture capitalists.

The Association for University Technology Managers conducted a survey using both U.S. and Canadian data for the fiscal year 1999, which showed there were more than 417 new products, therapeutics and diagnostics that reached the market through university/

industry tech-transfer interactions. This resulted in over 270,000 jobs, \$41 billion in economic activity, and \$5 billion a year in tax revenue.

One of the cornerstones of this strong growth was the Bayh-Dole Act in 1980,<sup>1</sup> which made technology transfer possible. It gave universities the ability to elect title to inventions that came out of federally funded research. It mandates the transfer of the advances in science to the private sector and encourages licensing to small businesses and start-up companies. As a result, technology transfer offices were created all over the United States. In 1980, the U.S. Supreme Court decision<sup>2</sup> making living organisms patentable, as long as they were man-made, certainly gave a boost to biotechnology. Venture capital soon became available, especially for university technologies.

We hope, of course, to maximize and increase our successes. We believe that working with both the venture communities and the management of start-up companies is very important. Management is still a little bit difficult for the University because we are a non-profit state institution, but we are looking at further possibilities in this area.

Technology transfer is an important factor in building economies. It is a young area where there are many opportunities to discover and to shape the interactions between universities and the private sector.

Thank you.

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<sup>1</sup> PL 96-517, 35 USC 200.

<sup>2</sup> *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).