

How Do We Start More Life Science Businesses in Washington?

**Research Conducted by Yelcho Strategies
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Executive Summary

The Pacific Northwest needs more life science companies. In early 2008, the City of Seattle and the Washington Biotechnology & Biomedical Association (WBBA) agreed that it was necessary to learn more about entrepreneurship in the life sciences. To that end, a joint study was commissioned.

To better understand the challenges faced at the earliest stages of these firms, interviews were conducted with the principals of more than a dozen life science companies in the Puget Sound region formed since January 1, 2006. CEOs or principal entrepreneurs were invited to discuss a range of topics related to company formation and sustainability. In addition, three interviews were conducted with entrepreneurs that had started companies in the current decade, but earlier than the study time frame.

The findings of these interviews were summarized into four key areas: talent, capital, technology transfer, and other.

Talent: None of the entrepreneurs cited the identification and recruitment of talent as a problem. Several of the interviewees suggested that the region is exporting talent because we lack a critical mass of activity in the region to support employment following lay offs, mergers and acquisitions. However, several interviewees suggested that there is a healthy base of research and lab talent and that more specialized senior talent such as sales and marketing professionals may be in short supply.

Capital: The companies appeared to cluster in three areas: early-stage science, venture fundable, and good life science businesses (GLSBs). GLSBs are businesses that have revenue prospects perhaps as high as \$200 million and include Contract Research Organizations (CRO), toxicology, software, and consultants. They are not likely to be candidates for IPOs and are regarded as not venture financeable. They may well be outstanding businesses, however.

Angel money is nearly the sole source for very early life science concepts and GLSB. Almost universally, interviewees stated that local angel networks have little life science expertise and that angel capital is nearly impossible to identify and access in Washington.

Venture deals occur primarily for business ideas that have the potential for becoming public companies usually with annual revenues of \$100-200 million or more. For these companies, the investing expertise is so specialized that it needs to be sought out without regard to geography. Angel money is nearly the sole source for very early life science concepts and GLSB. Almost universally, interviewees felt that local angel networks have little life science expertise and that angel capital is nearly impossible to identify and access in Washington.

Since GLSBs were a category of company that was not anticipated when the study was initiated, we recommend more research on the niche. Several of the interviewees emphasized that these firms are important to create a stable sector base, which does not exist in the region today and will help recruiting to the area.

Technology Transfer: Technology transfer was one area that has been cited as a barrier to the formation of new businesses. Comments by interviewees focused solely on the University of Washington and did not provide insight on technology transfer elsewhere in the state. Technology transfer at the University of Washington was not noted as an area of concern by the interviewees. While all noted that there are challenges in the system, they also acknowledged that progress had been made. A more serious concern expressed by a significant number of the interviewees was that the local research culture—including the University of Washington—is not one that supports entrepreneurship and commercialization out of the research institutions.

Other Issues: All of the interviewees felt that there is a demand for multiple networking systems for entrepreneurs and inventors. It was acknowledged that different kinds of events with changing formats were required to retain interest.

Lastly, the WBBA was viewed as a valued resource and is looked to for leadership for developing additional resources.

Based on the interviews, the following recommendations emerged:

1. Conduct additional research to understand the role of Good Life Science Businesses.
2. Create a Life Science Angel Network.
2. As a long-term strategy, the industry should advocate for changes in the state constitution to allow for more direct investment by the state in commercialization.
3. The sector should duplicate the Accelerator model in other life science fields such as devices, diagnostics, and GLSBs.
4. A business idea incubator (such as Entrepreneur-in-Residence programs) should be developed to foster the development of new companies.
5. The WBBA should convene and assist in networking events for director level and above.

How Do We Start More Life Science Businesses in Washington?

For many years, a debate has raged in the life science sector in Washington. Why aren't there more life science startups?

- Many Washington entrepreneurs are livid when they are asked the question. Most see a serious lack of investment in new life science businesses. In a region that spends perhaps as much as \$2 billion per year on life science basic research, they ask, why is there only a trickle of startup activity?
- Venture capitalists, on the other hand, articulate a very different point of view. There is plenty of investment capital available, they insist. The problems in our region have more to do with the difficulties of getting commercially viable technology out of the research institutions—and a lack of management talent to run early stage companies.

Nearly everyone agrees, however, that more quality startups would be of great benefit in building a critical mass of life science companies in our region.

In early 2008, the City of Seattle and the Washington Biotechnology & Biomedical Association agreed that it was necessary to learn more about the life science entrepreneurial process. Both entities wished to foster more quality startups in the region and better understand how to increase the region's record in starting new companies in the sector.

They hoped to do something new: To actually go out and talk to the entrepreneurs that had started companies during 2006 and 2007 and learn from them.

The WBBA contracted with Yelcho Strategies to conduct a study of the local environment for early-stage companies in the life sciences. The principals of the firm had vast experience in the field and, it was hoped, could gain insights beyond the data that would be collected (see Appendix A). The purposes of the study were to:

- Analyze the business environment for life science entrepreneurs.
- Present realistic and achievable recommendations to enhance life science commercialization in Washington.
- Support the broad goals, identify gaps, and refine the objectives of the WBBA life science strategy (see **The Future of the Life Sciences in Washington**).

Twenty-two companies were identified that had been started during the time period. Substantial efforts were made to interview all of the entrepreneurs. Interviews were conducted with eleven of the life science entrepreneurs (Appendix B). CEOs or principal entrepreneurs were invited to discuss a range of topics related to company formation and sustainability.

The findings of these interviews were summarized in four key areas: talent, capital, technology transfer, and other.

Methodology

The focus of the study was on the early stages of company formation and life cycle. Interviews probed the experiences of people who had started companies in the last two years. Using the knowledge and experience of the principals in Yelcho and the staff of the WBBA, a list of 21 life science companies was compiled that had formed since January 1, 2006. This list included companies that develop life science tools, therapeutics, or diagnostics (Appendix B). We sought to identify both successful startups and companies that had failed or were struggling to get a full picture of the entrepreneurial landscape.

Substantial efforts were made to interview all of the entrepreneurs. We were successful in conducting interviews with eleven of them (also noted in Appendix B).

The primary method to collect information was through an in-depth interview with the CEO or principal business entrepreneur. All interviews were confidential with the results aggregated and anonymous. A wide range of topics was explored in the interviews including:

1. Principal challenges in starting the company;
2. Future concerns;
3. Recommendations for future startup activity;
4. Funding;
5. Management talent;
6. Source of technology;
7. Space;
8. Role of WBBA and other non-governmental organizations;
9. Role of governments;
10. Role of research institutions; and
11. Evaluation of collaboration with other local companies.

Results of the interviews were summarized and evaluated by the study team for findings and recommendations.

In addition, the principals were asked to interview executives from Gilead, Trubion, and NeuroVista. These companies were included to provide additional perspective on the research questions from more mature entrepreneurial companies. These interviews were conducted toward the end of the interview process and were used to validate the findings of the earlier interviews.

Findings

Management Talent

Locating and recruiting talent was not seen as a barrier by any of the entrepreneurs. A number commented that there was an ample supply of researchers for early stage life science companies and that this was a strength of the Seattle area. One of the CEOs interviewed went so far as to say that the notion that it is hard to identify and recruit talent is a myth that has been propagated by a few venture capitalists in the region and that it is not a problem. However, several of the CEOs suggested that more specialized talent needed by more mature organizations such as sales and/or marketing managers were harder to recruit.

Counter to the common perception in the region, many of the entrepreneurs worried that the region is exporting talent. Further exploration of this issue revealed a perception that the region had lost talent following several recent acquisitions and mergers. This was characterized as a problem of critical mass – meaning that the region did not have the same level of activity in the life sciences as other regions and that talent migrated to other regions to take positions because local positions were not available following the mergers.

For the eleven early stage companies interviewed, the CEOs identified 62 employees (Table 1). This rather low level of employment may be expected given the company stage. Companies that had received venture funding averaged 13 employees and companies that received angel funding averaged 3 employees.

Table 1. Employment in Interviewed Companies

Category	All Employees	Average
Angel	22	3
Venture	38	13
Other	2	2
Total	62	6

One CEO commented that it is unlikely that companies in the current environment will get larger than 200 employees. He believed that it was more likely that companies would get to no more than 50 employees before they were acquired. Another CEO reinforced this point, by stating that IPOs are no longer an exit —acquisition is the primary goal.

Technology Transfer

All comments about technology transfer focused on the University of Washington. In general, the comments were positive and could be summarized as – progress has been made, but challenges remain.

None of the entrepreneurs had any comments about any other research organizations. We did not have the opportunity to interview executives from any companies that had derived technology out of any non-University of Washington research organization. It does appear that the rate of life science company formation is lower at the other research institutions in our region.

We were concerned that the background of the principals might bias these results. Consequently, Dr. Severson did not participate in several interviews. The comments did not vary, however, regardless of Dr. Severson's participation.

Participants uniformly expressed respect for the Office of Technology Transfer. They felt the office was professional and that the process was tough, but reasonable. They commented on the value of bringing people into the office with industry experience. One CEO commented that he thought that the change in the conflict of interest rules has helped. While most acknowledged that improvements could be made, one CEO summarized a consensus view that this was not a decisive factor impeding life science startup companies. Another noted that "UW Technology Transfer is not spectacularly onerous. It is about the same to deal with as everyone else. The University of California system is worse."

However, criticisms and suggestions for improvement were offered.

- "The University of Washington presents a high barrier for negotiation. More flexibility is important to meet the needs of small companies."
- "The University should have more emphasis on starting companies and adding jobs, as opposed to the generation of generate revenue. Tech transfer should be part of the community."
- "The licensing process is too long."
- "There should be uniform licensing terms – as is – with no negotiation. There should be more attractive terms for startups or companies in Washington State, which may not be possible since people are looking at different technologies."
- "The tech transfer process needs to be more customer-focused on the business transaction – the job should be to get the technology out on reasonable terms."
- "We should utilize university resources—business and law students—better to help commercialize technology."

Rather than focus on technology transfer *per se*, a number of CEOs commented on the culture in the research institutions. The observation was made several times that the mindset of the faculty is more academic than other regions and that a negative attitude

exists toward commercialization. Several commented that the institutions in the region focus more on basic research and have less translational research than other regions. One CEO felt that the issue relates to the recruitment of new faculty and generational perceptions toward commercialization. Another noted that there needs to be an incentive in the system. Another CEO was blunter in his assessment of the culture: “No one at the UW really cares. The goal is to get the science done. Nothing more.”

Capital

General. Of the eleven companies for which interviews were conducted, \$37.55 million had been raised with an average amount of \$3.4 million (Table 2).

Table 2. All Capital Raised

	Cash Raised
Average	\$3.41 M
Total	\$37.55 M

A closer look at the data established that the companies represented could be classified into three categories:

- Venture fundable,
- Early-stage science, and
- Good life science businesses (GLSBs).

Venture Capital. Venture fundable companies were defined as firms that have the potential for annual revenues greater than \$100 million (one interviewees said that the number was \$200 million). Typically, these are companies that are judged, by venture capitalists, to have an opportunity to one day go public (IPO). Only three companies in our interview set had raised venture capital. On average these three firms raised \$10.3M and had \$18M committed in future payments (dependent on achieving progress milestones) (Table 3).

Table 3. Venture Capital Raised

	Cash Raised	Capital Committed
Average	\$10.33 M	\$18.17 M
Total	\$31.00 M	\$54.50 M

In contrast to long standing beliefs in the local sector, the importance of local venture capital was questioned. There were two contrary viewpoints expressed on this topic, each of which has some basis in fact.

- Several of the CEOs interviewed made the point that the investing expertise for life science technology is so specialized that it needs to be sought out without regard to geography. World class experience and expertise in a new

entrepreneurial endeavor is a scarce resource they noted. Successful entrepreneurs must go to the expertise necessary for their technology: “If the right VCs are in Boston, you need to go to Boston.” Several CEOs (and one of the venture funded CEOs) believed that local entrepreneurs were not taken as seriously as other entrepreneurs from other regions. This, it was believed, was not an unusual circumstance and occurs in many other regions and sectors.

- The contrary view is also true: It is difficult to obtain venture funding from out of town resources. Interviewees noted that venture partners found it difficult to make the personal time investments to be on boards of directors and become personally involved with a company when additional travel time was required. Further, some CEOs noted that when presenting their companies for investment to VCs in other regions, they felt that they had a more difficult time because of a presumption that Northwest region venture funds had already passed them over.

Firms that were had either early stage science or were GLSBs are not venture financeable in the current market.

- Early stage science companies do not yet have the proof of concept that might make them venture fundable. They may be good ideas with good science, but in an investment market that is increasingly focused on later stage technology, few investors are interested in deals that are so early stage and, usually, riskier.
- Good Life Science Businesses seem to be almost unknown in the region. They are not likely to have revenues that will exceed the \$100-200 million annual range, nor are they ever likely to be candidates for the public markets (IPOs). They are companies that have technical products or services that are focused on the life sciences (but we do not include businesses such as law or accounting firms in this category). They are often profitable and growing and exit strategies are almost always through acquisition.

Angel funding. Angel capital was the initial source of funds for seven companies in the interview set. All of the CEOs interviewed felt that angel money is nearly the sole source for very early life science concepts and GLSBs. Virtually every interview noted that local angel capital is extremely difficult to identify and access in Washington and that local angel networks have little life science expertise. One CEO noted that, in other regions, individuals who leave life science companies (following acquisitions, for example) stay passionately committed to commercializing the science by both investing and their personal efforts; in this region, they seem to retire.

Only \$1.75 million in angel funding was raised in the two years (Table 4). Of that amount only about \$500,000 was raised from local angel networks. The remainder was raised either by angel investors from other regions (such as California) or by management teams that went back to investors in prior endeavors—and who invested in the teams for a second time.

The CEOs felt that an angel group for life science was needed. Furthermore, a number of the CEOs felt that WBBA could play a central role in hosting and organizing such a group.

Table 4. Angel Capital Raised

	Cash Raised	Locally Raised
Average	\$0.72 M	\$0.29 M
Total	\$5.05 M	\$1.75 M

The emergence of Good Life Science Businesses (GLSB) as a category of company was an unexpected result of our research. In pursuing this concept with interviewees, we learned that few of these companies exist in Washington. Of those that are located in the region, few derive significant revenues in Washington. For the most part, these businesses appear to be service providers, contract research organizations (CRO), toxicology contractors, software developers, and other tool providers that contribute to the local ecosystem and create a stable sector base. They have revenues that do not meet criterion for venture investment, but might well generate up to hundreds of millions in revenues and a large and stable employment base. We believe that the development and nurturing of this company type deserves additional attention.

Several of the CEOs acknowledged the importance of GLSBs. They suggested that local investment attention is usually focused on home run business plans as opposed “good business opportunities.” It is difficult getting started if the expectation is that only a home run will be considered a success.

Networking

Most of the CEOs interviewed were enthusiastic about an expanded menu of networking opportunities for entrepreneurs and inventors. A number felt that an array of activities was preferred with changing formats to keep the events fresh and to retain interest. Others were more specific and emphasized the need to differentiate between entrepreneur-to-entrepreneur events and inventor-to-inventor events. Most recommended that the WBBA could play an important role in organizing these events. Specific ideas included:

- Entrepreneur services;
- Mentors;
- Business pitch training;
- Expert panels;
- Networking events;
- CEO roundtables for companies that are at similar stages of development and formation, which might provide peer-to-peer sharing of problems and to facilitate networking;
- Entrepreneurs Forum;
- “Train the scientists to be entrepreneurs” aimed at PhD candidates and post-docs in the research institutions; and
- Practical advice on starting a company – a checklist of the things to do.

Another concept that emerged from the interviews was the opportunity for the WBBA to play a role in connecting early stage companies with mentors. Several of the CEOs were emphatic about the value of finding ways for experienced CEOs to work with entrepreneurs. While several suggested panels of “grizzled veterans,” others felt that a matching system and one-on-one introductions would be preferred. Regardless of the format, the goal expressed by all of those interviewed was to find ways to connect entrepreneurs with experienced people who can make a difference.

Other Findings

Many of those interviewed were enthusiastic about the role of the WBBA in taking on this study. Many said that this was the first time that the opinions and experiences of early stage company entrepreneurs had been sought. In addition, the WBBA was clearly viewed as a valued resource and was looked to for leadership for developing additional resources.

A number of CEOs noted that other states had recently developed funds and programs to facilitate commercialization. Programs that were mentioned included investment funds for in-state companies and non-dilutive capital. When this topic was explored in more depth, many of the CEOs agreed that the state constitution should be changed to allow investment in companies. Several CEOs specifically said that the Life Science Discovery Fund (LSDF) would have more impact if the funds were put into companies than into basic research.

An intriguing concept that emerged was an Entrepreneur-in-Residence program. Several noted that an entrepreneur needs to go for about a year without a paycheck to get a company started, which certainly limits the number of companies that get started. One interviewee was very specific about this topic and suggested that a program that supports five entrepreneurs with a salary of \$200K per year for two-years each would generate more companies. The entrepreneurs could be housed at the WBBA and work together to identify, evaluate, and develop new ideas. In a related discussion, other CEOs suggested that an extension of The Accelerator model could be replicated across other opportunities, such as diagnostics and devices.

Access to facilities was identified as a need by several of the CEOs. They noted that lab space is hard to find in the region. Ideas to solve the problem included government incentives to make more lab space available and the creation of a space clearinghouse.

Recommendations

- 1. Conduct additional research to understand the role of what we have termed Good Life Science Businesses (GLSB).** Our sector is primarily focused on the venture financed, big idea company. Our history with these companies is that they tend to get started with venture financing. Sometimes they fail; often the successes are measured by their acquisition. In contrast, GLSBs are businesses that are stable, long lasting, and science-focused. They may employ a large number of people and generate significant revenues and profitability, but they are not likely to become public companies. Nor are they likely to be venture funded. Many of our interviews turned to the role of these businesses as a source of critical mass, employees, stability, and ideas, but it was—in many cases—a novel notion for our region. We need to understand this part of the sector better and whether it is important for our future development.
- 2. Create a Life Science Angel Network.** Over and over again, we heard that there is no network of angel financing to get companies started in this state. Very little money was raised from Washington State based angel investors in the last two years. Further, grant funding has become very difficult and rare. For both early stage science companies (that might one day evolve to be venture fundable) and for Good Life Science Businesses, this means that the only sources of capital are out-of-state angels or (in some cases) investors who are following a management team's track record. In our region, some of our most successful life science leaders have not been active after the acquisition of their companies. The region must find a way to integrate retired life science employees (Immunex, Icos, etc.) to become investors in the sector and to encourage investors who have no life science backgrounds to take an interest in these investments.
- 3. Amend the state constitution.** Many of our interviewees believed that over the longer term, we need to get the state in the game by changing the constitution. The inability of the State of Washington to make any kind of investment in private entities severely cripples the state in a world that is competing aggressively for these businesses.
- 4. Encourage the development of investment incubators (such as The Accelerator) in other life science business fields.** The Accelerator has been widely noted for its success in starting venture funded life science businesses. Since its inception, The Accelerator is a catalyst in the starts of a large number of venture financed companies. The Accelerator has focused on nascent leading edge biotechnologies. Duplicating this model in other fields such as devices, diagnostics, and GLSBs might well have very positive effects for the region and investors.

5. **Develop a business idea incubator (Entrepreneur-in-Residence) program.** Several entrepreneurs noted that it takes, on average, about a year to develop a fundable business plan. Few entrepreneurs can go a year without a salary. Financing this period of time for qualified entrepreneurs in a facility that would allow for cross-fertilization of ideas was viewed by some of the interviewed entrepreneurs as a sure fire means of starting high quality companies.

6. **The WBBA should convene and assist in a variety of frequent events for director level and above personnel.** Without any dissenting voices, interviewees agreed that it is very important to encourage and enhance communications and knowledge in the community. These activities probably will require many different foci, venues, times, etc. to remain fresh and vital, but all agreed that it is important to develop these resources in order to ensure that “wheel is not recreated” with every new company. These events should include:
 - a. Entrepreneur-to-entrepreneur.
 - b. Inventor-to-entrepreneur.
 - c. Information clearinghouse.
 - d. Practical pathway advice.

Summary and Conclusions

We have significant assets in our region that can provide the basic discoveries and research talent to fuel start ups:

- Lead by the University of Washington, Fred Hutchinson Cancer Research Center, the Pacific Northwest National Laboratory, Washington State University, and other world class research enterprises, our basic research capabilities are second to none.
- The existence of the Bill and Melinda Gates Foundation has made our region a world leader in global health. It is very likely that the Gates Foundation will spur changes in our region and in our world, the likes of which may be beyond imagination.
- There is a rich talent pool in the region from recent successes.

These assets are a vital starting point for a vibrant commercial life science sector.

We need to do better. Despite these assets, we were able identify only 21 life science startups in the last two years. There are benchmarks (measuring startups per research dollars spent) that suggest that this is substantially lower than the national average. This suggests that a culture that is more supportive of commercialization opportunities, provides more assistance for entrepreneurs and early-stage companies, and helps develop funding opportunities is critical if we are to improve our rate of commercialization. Vibrant ecosystems for the development of lifesaving technologies successfully move basic discoveries into the development of products, jobs, and companies. This is a defining challenge for our region.

We believe that better understanding the GLSB sector, developing life science angel networks, getting the state to understand its significant role at the earliest stages of company formation and the profound impact that it can have on economic development, replicating successful incubator models, developing Entrepreneur-in-Residence programs, and improving communication and networking are solid strategies to invigorate the sector.

We hope that the recommendations that have emerged from this study can have a role in making a significant change in the commercialization of life science in the State of Washington.

APPENDIX A

YELCHO STRATEGIES

James A. Severson, Ph.D.

Jim Severson has extensive experience in business development, technology assessment, intellectual property strategy, university-industry contracting, and technology transfer.

From 2003 to 2008 he was the Vice Provost for Intellectual Property and Technology Transfer at the University of Washington. In this role, he was responsible for the commercialization of discoveries made at the UW. Prior to joining the University of Washington, Jim was the President of the Cornell Research Foundation where he was responsible for technology transfer from Cornell's Ithaca campus and the Weill Medical College of Cornell University in New York City. Jim also held technology transfer positions at the University of Minnesota and positions in new technology assessment and market development at Amersham Corporation.

Jim is a Past President of the Association of University Technology Managers (AUTM), a national organization of university technology transfer professionals. In 2005, AUTM awarded Jim its highest honor, the Bayh-Dole award, "in recognition of untiring efforts to foster and promote intellectual property activities on behalf of the university and nonprofit community." Jim also served as a member of the Board of Directors of the Council on Governmental Relations (COGR), a Washington-based association of over 170 research universities and research institutes that focuses on the policies and issues of federally sponsored research programs at universities, and he chaired its Contracts and Intellectual Property Committee.

Jim received a B.S. in zoology and a Ph.D. in physiology from Iowa State University, and did postdoctoral research at the University of Southern California. He also held a faculty appointment in the University of Southern California School of Medicine.

J. Thomas Ranken

Tom Ranken has been an entrepreneur, business executive, and leader in the life science industry in Washington State since 1989.

Tom was most recently CEO of VizX Labs, which he co-founded in 2001. Under his leadership, the company raised capital, developed the software service, and created the sales and marketing systems that lead to the company's revenue development. The GeneSifter software system helps biomedical researchers make discoveries about the role of genes in diseases and life processes.

Before founding VizX, Tom was CEO of Axio Research Corporation, a Seattle company that provides biostatistics expertise for health research. Under his leadership, the company became profitable after significant losses, while doubling its revenues. Tom was President of the Washington Biotechnology & Biomedical Association from 1995-1998 and Manager of Public Affairs at Immunex Corporation (later acquired by Amgen) from 1989-1994. He began his career in banking, including serving as Assistant Vice President of Washington Mutual during most of the 1980s.

Tom served as a Trustee at Harborview Medical Center for fourteen years and was twice elected president of the Board. He has served on numerous boards including the Washington Biotechnology & Biomedical Association, Technology Alliance, Seattle Mental Health Institute, Municipal League, Council of State Bioscience Associations, and the BIO Emerging Companies.

Tom earned his MBA from the University of Washington; his BA in Economics is from the University of Virginia. Weekends often find him playing lead guitar for 'The Brakes,' a Seattle rock 'n' roll band, camping with Boy Scouts, or watching his daughter play volleyball.

APPENDIX B

Companies Identified for Interviews (* indicates interview completed)

Company	Origin	Description
Aequus BioPharma, Inc.*	cti	Aequus' mission is to develop Equitable Biomedicines™: Exceptional biopharmaceuticals delivering superior value to patients. Aequus BioPharma was formed to discover, develop, and market biotherapeutics based on proprietary technology invented at CTI. Their Genetic Polymer™ technology addresses many of the pharmacological shortcomings of traditional protein-based drugs and provides a platform for the efficient and cost-effective development, manufacture, and commercialization of biopharmaceuticals, thereby reducing the time and investment required for patients to benefit from high-value breakthrough scientific discoveries.
Ascentia Biomedical	UW	Ascentia is developing and commercializing new pharmaceutical and biomedical products for application in a number of areas, including treatment for asthma, arthritis, psoriasis, and cancer. Ascentia is focused on therapies for cancer and diseases of inflammation.

AVM Biotechnology LLC (Ave Maria)		AVM Biotechnology offers a positive, ethical, and effective alternative to the moral hazards pervasive in the fields of biotechnology, pharmaceuticals, and vaccine development. The use of aborted fetal tissue and embryonic cells in the discovery, development, and production of vaccines and pharmaceuticals has increased dramatically in the past decade. Without a positive alternative, obtaining new medication or vaccinations which are ethically untainted will be difficult, if not impossible. By developing moral alternatives to unethical practices, AVM Biotech seeks to relieve parents, families, medical professionals, hospitals, and health care organizations from having to choose between the health of a loved one or patient and the forced participation in a morally objectionable treatment. Our products reflect a profound respect for human life from its beginning until its natural conclusion. AVM Biotech certifies that its therapeutic products are not discovered, screened, evaluated, produced, or tainted in any way by the use of directly aborted human fetal material, human embryonic material, or any other unethically obtained materials.
Calcionics Corporation*		Calcionics is a biotechnology company focused on developing innovative peptide therapeutics for cardiovascular disease and other medical conditions. Calcionics employs a novel strategy to prevent and treat cardiovascular disease by targeting calcification.
Calistoga Pharmaceuticals, Inc.*		Calistoga Pharmaceuticals is a development stage pharmaceutical company in the Seattle area, working on novel therapeutics for human disease.
CGT Corporation		Gene therapy products to treat multiple types of cancers via systemic administration.
Cirrus BioSystems*	UW	Cirrus BioSystems brings to life the vision of modernizing the research lab. Through the development of innovative tools and technologies, Cirrus BioSystems improves standard operating procedures in animal research.

CorazonX	UW	CorazonX is developing ultrasound technology to detect the presence of arterial plaques which leads to narrowed (or stenosed) arteries in the heart. They plan to develop this technology into a noninvasive, inexpensive, fast, and potentially portable test that detects coronary artery disease in its early stages.
Fate Therapeutics, Inc.		Fate Therapeutics was founded by the world's leading experts in adult stem cell biology to develop and commercialize therapies to control the destiny of cells.
Healionics Corporation*	UW	Healionics is a biomaterials company which partners with medical device manufacturers to enhance the biocompatibility and performance of current and next-generation devices. Healionics utilizes its portfolio of intellectual property to create products and solutions that enhance and increase the quality of life.

Iverson Genetic Diagnostics, Inc.*		Iverson Genetic Diagnostics has staged a market presence for a series of genetic tests that are the focus of regulatory governmental support for the introduction of molecular diagnostics into clinical applications. The company is licensed to operate as a high throughput medical testing site with an initial workload capacity of 28,000 samples per month.
Kineta*		Kineta is built around the team that led the successful \$341.5M Illumigen/Cubist merger in 2007. Following that success, Kineta is dedicated to developing novel therapies that address significant unmet needs in infectious disease and inflammation.
Mirabilis Medica*	UW	Mirabilis Medica was formed to develop a high intensity ultrasound machine to noninvasively treat uterine fibroids--small, noncancerous tumors that are a leading cause of hysterectomies.
PfemtoQuest*	UW	PfemtoQuest has developed a proprietary biochip for cancer cell detection and prognosis, improving the assessment of cancer recurrence and spreading.
PhaseRx, Inc.*	UW	PhaseRx develops new polymers for the delivery of siRNA and other macromolecules.
Promentix*	UW	Promentix is an early stage biotechnology company developing therapies for protein aggregation diseases such as Alzheimer's and Parkinson's Disease.

Recodagen Corporation	WSU/Accelerator	Recodagen will research therapies to arrest the spread of cancerous tumors.
Seredigm	UW/Accelerator	Seredigm was founded to commercialize proprietary compositions that protect against tissue damage in a variety of acute or chronic medical conditions like heart attacks.
Supersonic Imagine		SuperSonic Imagine has developed a revolutionary Ultrasound Medical Platform that enables the measurement and imaging of tissue-elasticity, a crucial physical parameter. Supersonic Imagine's innovative system takes ultrasound imaging beyond the limits of conventional technology by (a) providing an imaging tool for both palpable and non palpable lesions, (b) improving the accuracy of biopsy guidance, and (c) providing a new, non invasive and cost effective means to monitor and assess HIFU (High Intensity Focused Ultrasound) therapy, SuperSonic Imagine addresses markets where ultrasound has already had a significant impact on the identification and treatment of lesions: screening, diagnosis, and therapy.
Uptake Medical Corporation		Uptake Medical Corporation is a Seattle-based, early-stage medical device company dedicated to improving the lives of patients suffering from emphysema and chronic obstructive pulmonary disease (COPD). Uptake Medical is developing a safe and effective, energy-based bronchoscopic lung volume reduction (LVR) treatment aimed at measurably improving lung function and patient quality of life. This approach avoids the attendant risks and costs associated with surgical LVR, endobronchial glues, valves, and occluders.
VentiRx		VentiRx Pharmaceuticals is a biopharmaceutical company committed to the development of novel medicines for the treatment of cancer, infectious, respiratory, and autoimmune diseases.
VP Diagnostics	UW	VP Diagnostics has developed software products that identify, analyze, and visualize the dangerous vulnerable plaque responsible for most strokes.